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DRAFT REMEDIAL INVESTIGATION REPORT
JASCO CHEMICAL CORPORATION
1710 VILLA STREET
MOUNTAIN VIEW, CA

OHM Corporation

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MOUNTAIN VIEW, CA

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September 17, 1990
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1.0 INTRODUCTION

1.1 OBJECTIVES

The objective of the remedial investigation process is to provide a sufficient amount of data to allow an informed decision as to the most appropriate remedial alternative to implement at a site. Such decisions are based upon factors which include the physical character of the study area, the type, concentration and spatial distribution of target constituents, the potential for migration of these constituents, and the potential for adverse effects on human health or the environment. The specific data required to attain this goal vary depending upon site conditions. The objectives of this Remedial Investigation are to establish those features of the site which have or may contribute to risks to human health or the environment as a result of the release of target constituents, to determine the nature and extent of these constituents within the surface and subsurface soil and groundwater, to identify the physical features of the study area which may contribute to the migration of these constituents or their potential for risk to human health or the environment, and to quantify the risks to human health and the environment resulting from site conditions.

1.2 SITE BACKGROUND

1.2.1 SITE LOCATION

The study area includes (1) the real property located at 1710 Villa Street, Mountain View, California, hereafter "JASCO", (2) the property which lies west of JASCO a distance of approximately 150 feet and north of JASCO a distance of approximately 275 feet. Figure 1.1 shows the location of the study area with respect to the City of Mountain View. Figure 1.2 shows the study area with respect to local roadways.

The area to the north and west of JASCO includes a portion owned by Southern Pacific Transportation Company (SP) and a portion of the Central Expressway, an east-west transportation corridor through the City of Mountain View as shown in Figure 1.2. The SP portion of the site consists of a 100-foot wide swath wherein two sets of railroad tracks extend in a general northwest-southeast direction connecting San Francisco with San Jose and points south. The Central Expressway, separated from the SP property by a six-foot high chain-link fence, is a four lane expressway with a 30-foot wide center median.

Figure 1.3 depicts the layout of the site and some of the general structures present. Structures thereon include a chemical blending and packaging production area, a warehouse area for inventory, storage areas for unused empty containers and drums and underground storage tanks.

1.2.2 Site Operations

Production activities at JASCO consist of the repackaging of bulk chemicals into small containers and the blending of chemicals to produce proprietary products. Bulk solvents are delivered to JASCO in tankers and are transferred by gravity to underground storage tanks located just south of the production area (Figure 1.3). Care is taken to assure that no spillage occurs during filling and that tanks are not overfilled. Loading and unloading areas are surfaced with a combination of asphalt and concrete. Solvents are pumped by suction to the filling machine or to blending tanks via above ground piping within the bermed production area. Non-bulk chemicals may then be added to the blending tanks to produce proprietary products. These proprietary products, as well as bulk chemicals, are then packaged in small containers (i.e. pints, quarts, gallons), capped, placed in cardboard cartons, taped closed and transferred to a finished goods area for later distribution. The production processes have remained unchanged since JASCO began operations at the Villa Street facility.

Through collection and reuse of residual materials, JASCO consumes all of its raw materials. Production lines are cleaned after each product run and residual materials are collected and stored in 55-gallon drums until the same or a compatible material is packaged and the residual material can be reused. This process has eliminated the generation of production wastes since its implementation in 1983. Prior to this date, wastes were collected and transported to a designated off-site disposal facility.

Minor spills, which occur infrequently, are immediately cleaned using absorbent materials and resultant wastes are stored in 55-gallon drums for reclamation. All above-ground tanks, production equipment, and product storage facilities are located in bermed areas such that a spill would be contained.

1.2.3 Site History

JASCO took possession of the facility in 1976 and has operated the facility as a chemical blending and repackaging plant since this time. Previous to JASCO's operation the facility was operated by West Coast Doors, Inc. a manufacturer of residential and industrial doors. The site was zoned for industrial use until December of 1983 when it was rezoned residential. The site is surrounded to the south, west and east by multi-unit residential property and to the north by property owned by SP.

In January of 1983 a resident of the area issued a complaint to the San Francisco Bay Regional Water Quality Control Board (RWQCB) concerning an alleged release of chemicals from the facility. On August 3, 1987, after JASCO initiated a series of site investigations (see Section 1.2.4 Previous Investigations), the RWQCB issued Cleanup and Abatement Order (CAO) No. 87-094. During the period between the issuance of the CAO and the present, JASCO has conducted additional soil quality investigations, constructed a 14 monitor well network providing soil and groundwater data from the upper two aquifers at the site, and implemented interim soil and groundwater remediation programs of the most affected areas. On June 24, 1988, EPA proposed the site for inclusion on the National Priorities List.

1.2.4 Previous Investigations

The following is a discussion of past investigations conducted at the site. Appendix A provides the references for past documents prepared in association with these investigations.

Pursuant to the citizen complaint in January of 1983, JASCO installed a groundwater monitor well (V-1) adjacent to the underground storage tank area. During this investigation a composite sample of soil was collected from the borehole and a groundwater sample was collected from the well. Each of these samples were analyzed for volatile organic compounds, phenolic compounds, alcohols and acetone, and kerosene and thinners.

In August of 1986, JASCO installed a second monitor well (V-2) at the north side of the facility adjacent to the drainage swale. Two composite soil samples and a groundwater sample were collected during this investigation. The soil samples were separated into a shallow composite representing samples collected from between the depths of five and 15 feet and a deep composite representing samples collected from between the depths of 20 and 35 feet. Each of these composite soil samples and the groundwater sample were analyzed for volatile organic compounds, alcohols and acetone, and kerosene and thinners.

In November and December of 1986, JASCO installed a third monitor well (V-3) to the north of the underground storage tank area and conducted a soil gas survey at the site to determine the distribution of volatile constituents in near surface soil across the site. Three soil samples for laboratory analyses were collected during the installation of the third monitor well. Two of these samples were composites of soil samples; one a composite of samples collected from the depths of five and ten feet and the other a composite of samples collected from the depths of 13, 16 and 19 feet. The third soil sample was collected from the bottom of the borehole at a depth of 36 feet. Each of the soil samples and the groundwater sample were analyzed for volatile organic compounds, alcohols and acetone, and kerosene and thinners. A time drawdown/recovery test was performed at this well to determine the hydraulic conductivity of the aquifer and measurements of all three of the monitor wells pumped were used to determine the groundwater flow direction and gradient.

During the installation of the third monitor well, soil samples were also collected from the backfill overlying several of the underground storage tanks. Two soil samples each were collected from the fill overlying the underground storage tanks containing acetone, lacquer thinner, and methylene chloride; one from near the filler neck and another from near the supply pump. Each of these samples were analyzed for the constituent being stored in the corresponding underground storage tank. Additional groundwater samples were also collected from monitor wells V-1 and V-2 at this time and were analyzed for methylene chloride.

Between June, 1987 and March, 1988 several hydrogeologic investigations were conducted. During these investigations seven additional wells were completed in the A-aquifer (monitor wells V-4 to V-9) and three wells were completed in the underlying B(1)-aquifer (monitor wells I-1 to I-3). Two of the A-aquifer wells, V-4 and V-5, were completed adjacent to the concrete pad abutting the northern portion of the JASCO facility. One monitor well, V-6, was completed at the northern portion of the SP property. Monitor well V-7 was completed in the median of the Central Expressway and monitor wells V-8 and V-9 were completed at the northern side of the Expressway. One of the B(1)-aquifer wells (I-1) was completed next to A-aquifer well V-4 and the other two were completed in the median of the Central Expressway. Groundwater samples collected from these wells as well as the previously installed wells were analyzed for volatile organic constituents (EPA methods 601/602), phenolic compounds (EPA method 604), acetone, methyl ethyl ketone and alcohols (EPA method 8015), and total petroleum hydrocarbons as paint thinner (EPA method 8015). These investigations also included sieve analyses of aquifer materials and the interpretations of lithologic data and target constituent distribution.

In June of 1987, eight boreholes (B-1 to B-8) were completed in the vicinity of potential source areas and at one background location. The locations of these boreholes are shown in figures 1.4 and 1.5. Borehole B-1 was completed at the southern portion of the site upslope of the potential source areas to provide background soil quality data. Two boreholes (B-2 and B-3) were completed at the southern edge of the drum storage area, a concrete-bermed area located south of the loading area. Borehole B-4 was drilled in the loading area just south of the covered storage area and east of the underground storage tank area. Two boreholes (B-5 and B-6) were drilled adjacent to the underground storage tank area at the western property boundary. Borehole B-7 was completed just north of diesel storage tank area. Borehole B-8 was drilled in the drainage swale area north of the production area. Each of the eight boreholes were completed to a total depth of between 20 and 22 feet. Soil samples for laboratory analysis were collected at regular intervals at each of the borehole locations and analyzed for volatile organic compounds, alcohols and acetone, and paint thinner.

At the request of the RWQCB, a groundwater monitor well (V-10) was installed downgradient of the former diesel storage tank in March of 1988. The presence of overhead power lines prevented the placement of the well within the boundaries of the former storage tank site. The monitor well was placed downgradient of the former tank as near to the tank as possible without compromising worker safety. Soil samples were collected at the depths of 8, 11, 16, 21, 26, and 31 feet. Each sample was analyzed for total petroleum hydrocarbon as diesel and for purgeable aromatic hydrocarbons.

In September of 1987, aquifer tests were performed at A-aquifer monitor wells V-1 to V-7 and at all three B(1)-aquifer monitor wells. Slug tests were performed on each of these wells by lowering a solid slug of known volume into the well inducing an instantaneous rise in water level. A data logger was then used to measure the decrease in water level with time until equilibration. At this point the slug was removed inducing an instantaneous decrease in water level and the process was reversed with the data logger recording the increase in water level with time. Valid data was collected only at the A-aquifer monitor wells. The rapid recovery of water levels in the B(1)-aquifer wells during the slug test prevented reliable estimates of aquifer parameters. The data collected during the slug tests of A-aquifer wells were then used to estimate the aquifer parameters of transmissivity, storativity, hydraulic conductivity and seepage velocity.

Between September 28 and October 1, 1987, a step discharge test and 48-hour constant discharge test were performed at A-aquifer well V-4. The step discharge test was conducted by lowering a submersible pump into the well and pumping the well at successively higher rates while measuring the drawdown with a data logger. The results of the step discharge test were used to determine the appropriate pumping rate for the 48-hour constant discharge test as well as to determine the well loss coefficient for well V-4. The 48-hour constant discharge test was performed by lowering a submersible pump into the well, pumping the well at a constant rate, and measuring the drawdown in monitor well V-4 and in several of the existing wells in the vicinity of the pumping well. The data was analyzed by several methods to yield estimates of the aquifer parameters of transmissivity, hydraulic conductivity, storativity, and seepage velocity.

Four exploratory boreholes (B-9 to B-12) were drilled between June, 1987 and April, 1988 to characterize the vertical extent of chemicals within the subsurface of the drainage swale area. The locations of these boreholes is shown in Figure 1.4. Exploratory boreholes B-9 to B-11 were drilled to a depth of 20 to 21 feet and borehole B-12 was drilled to six feet. Samples were retrieved at intervals of between two and five feet from the surface to the total depth of the borehole. Each soil sample was analyzed for volatile organic compounds, alcohols and acetone, and total petroleum hydrocarbons as diesel, kerosene, lacquer thinner, and paint thinner.

In May of 1988, a "Potential Conduits Investigation" was prepared for the JASCO site. This investigation was conducted to determine the potential for the migration of target constituents through unsealed wells, wells with multiple perforations, filter packs associated with monitor well installation, excavations related to utilities, storm sewers, and the Hetch-Hetchy aqueduct. The Santa Clara Valley Water District, California Department of Transportation, California Department of Water Resources, Santa Clara County Health Department, and local drilling companies were contacted for information concerning the location, construction, and sampling of wells in the vicinity of the site. The City of Mountain View, the San Francisco Water Department, Pacific Bell and Pacific Gas and Electric were contacted concerning the location and installation of utilities in the vicinity of the site. Each of the potential conduits identified were then evaluated according to the potential for lateral or vertical migration of target constituents within or between permeable and water-bearing zones in and around the JASCO facility.

Fifteen soil samples (SB-1 to SB-15) were collected from a depth of 3.0 to 3.5 feet within the drainage swale area in May of 1988 to characterize the lateral extent of chemicals immediately below the surface of this area. The locations of these sample points are shown in Figure 1.4. These sample locations were spaced at regular intervals from the easternmost point of the former drainage swale just north of the production facility to approximately 120 feet west of this point. Soil samples were collected by hand using a hand auger. Each sample was analyzed for volatile organic compounds, alcohols and acetone, and total petroleum hydrocarbons as diesel, kerosene, and paint thinner.

A quarterly groundwater monitoring program is currently in place at the JASCO facility. Groundwater samples from each of the monitor wells are analyzed for volatile organics (EPA method 624) and all but V-5, V-6 and V-7 are also analyzed for acetone and alcohols using a modified form of EPA method 8015. Monitor wells V-5, V-6 and I-3 are monitored on a semi-annual basis by agreement with EPA, as no target constituents at concentrations exceeding minimum detection levels have been identified during sampling phases in 1989 and 1990. Groundwater samples from selected wells, based upon the findings of previous sampling phases, were also analyzed for phenols (EPA method 604), semi-volatile organics (EPA method 8270) and high boiling point hydrocarbons using a modified form of EPA method 8015. Laboratory data at regular intervals has been generated for the monitor well network since January of 1989. Earlier data from the wells installed prior to the completion of the current well network was collected at the time of installation and during additional groundwater investigations.

1.2.5 Interim Remedial Activities

Since October of 1987 several measures have been taken to remediate soil and groundwater at portions of the site and to prevent future releases of target constituents from the facility.

A groundwater extraction system has been installed at monitor well V-4 and has been in operation since April of 1987. A submersible pump operating at a low continuous flow to limit drawdown is used to remove groundwater from the well. This groundwater is then directed through a plumbing system to the city sewage system under a permit authorized by the City of Mountain View. Well V-4 was chosen for this purpose because of its proximity to the former drainage swale and its downgradient location from the production area and the underground storage tank area. This system has been in continuous operation since April of 1987 with the exception of short periods for maintenance of equipment. Water samples for laboratory analyses are collected monthly from the discharge line to ensure that concentrations of target constituents do not exceed the limits as specified in the permit authorized by the City of Mountain View.

On October 2, 1987, the diesel storage tank at the eastern edge of the site was excavated, dismantled, and disposed at a licensed off-site waste disposal facility. This tank had been installed by West Coast Doors Inc. prior to JASCO taking possession of the site. At the time of removal, two soil samples were collected; one from the bottom of the excavation (approximately eight feet) and from one sidewall of the excavation about two feet above the bottom. The sample collected from the base of the excavation contained total petroleum hydrocarbons as diesel at 360 ppm and benzene, toluene and xylene ranging from 0.55 ppm to 9.6 ppm. The soil sample collected from the sidewall contained total petroleum hydrocarbon as diesel at 59 ppm and benzene, toluene, and xylene ranging from 0.39 to 7.8 ppm.

In March of 1988 a leak detection system was installed in the underground storage tank area. This system, installed by Tracer Research Corporation, replaced the existing hydrocarbon sensing system. Evacuation probes, from which soil gas samples are collected, were installed adjacent to each of the eight underground storage tanks to a depth below the base of the tank (approximately 12 feet). Each probe is slotted for approximately six inches at its bottom. Air is evacuated from the probes with continuous duty vacuum pumps. Two pumps are used each of which evacuate four probes. One of several tracer labeled chemicals is added to the tank on a bimonthly basis. This interval was chosen such that the tracer concentration in the tanks would always exceed one ppm based upon average usage of each tank product. Background soil samples were taken prior to system startup to ensure that tracer-labeled chemicals were not present in subsurface soils. A sample from each of the two pumps is collected each month and analyzed using a gas chromatograph. If a tracer chemical is detected in either of the samples, additional samples are collected within 24 hours from each probe connected to the pump which indicated the tracer chemical. Each sample is then analyzed to isolate the tank with the potential leak. Based upon the results of this sample the suspected tank may be retested with a different tracer, a soil gas survey may be initiated, or the tank may be emptied and taken out of service. An overfill protection system has also been installed in the storage tank area to prevent spillage during the filling of tanks.

An interim remedial action consisting of the excavation and removal of soil was conducted at the eastern portion of the drainage swale area between October 25 and November 7, 1988. The location of the area excavated is shown in Figure 1.6. A spin auger was used to excavate 572 cubic yards of material from the swale area by drilling overlapping three-foot diameter boreholes. This material was disposed at Casmalia Resources facility in Casmalia, California. The excavation was filled with lean concrete. The excavation extended to a depth of 22 to 28 feet based upon the results of on-site OVA analyses and the depth of the water table (approx 28-30 feet). Confirmation samples were collected at the bottoms of several of the excavation soil borings, at statistically chosen random locations, and/or at manually selected locations. Results of the confirmation sampling analyses were up to four orders of magnitude less than pre-excavation sample results. Of the volatile organic compounds for which analyses were conducted, only acetone, ethanol, methanol, methyl chloride, and xylene were detected at concentrations exceeding one ppm. None of the confirmation samples contained kerosene, diesel fuel, paint thinner, or other high boiling point hydrocarbons exceeding 20 ppm. A more detailed discussion of the excavation program can be found in "Interim Remedial Measures, October through November, 1988," prepared by Harding Lawson Associates.

Following excavation, a surface water runoff management system was installed at the facility to prevent further surface water infiltration within the drainage swale area. The design of this system is shown in Figure 1.7. A plastic liner was placed over the former drainage swale area and fill was placed above the liner so as to facilitate drainage towards the rear yard area of the JASCO site rather than away from it as it had done previously. The liner was placed to prevent downward percolation of runoff and to direct the runoff to a sump constructed at the northwest corner of the JASCO facility. Runoff collected in the sump is then pumped through above ground piping to a storm water collection system with ultimate discharge to the City of Mountain View sewage system. A more detailed discussion of the excavation program and runoff management system installation can be found in "Interim Remedial Measures, October through November, 1988 (February 15, 1989) prepared by Harding Lawson Associates.

2.0 STUDY AREA INVESTIGATION

2.1 GEOLOGICAL INVESTIGATIONS

Five boreholes and two monitor wells were completed in association with this remedial investigation. During the completion of these boreholes, the lithology was logged by a hydrogeologist according to the Unified Soil Classification System. This information, incorporated with lithologic data collected in association with previous investigations, and research data concerning the regional geology, was used to interpret the site-specific geology. These data are presented in section 3.1.4 Geology.

2.2 SOIL AND VADOSE ZONE INVESTIGATIONS

The field work associated with this remedial investigation included the following soil and vadose zone investigative activities:

- collection of surface and subsurface soil samples from the drainage swale area;
- collection of subsurface soil samples from the vicinity of the underground storage tanks;
- collection of subsurface soil samples from the drum storage area;
- collection of subsurface soil samples from a background location.

This information was collected as a supplement to data collected during previous investigations and to fill any data gaps remaining.

2.2.1 Drainage Swale Surface Samples

Samples were collected from five sample locations (S-1 to S-5) relatively evenly spaced along the length of the drainage swale (Figure 2.1). Sample point S-1 was located just east of the impermeable membrane runoff collection system at the lowest point between the toe of the ballast and the concrete pad. Sample points S-2 and S-3 were located at the toe of the railroad ballast immediately north of the runoff collection system. Sample locations S-4 and S-5 were located 15 and 45 feet west of the westernmost point of the runoff collection at the lowest point between the ballast and the fence separating the SP property from the multi-unit housing area. Two samples were collected from each sample point, one from a depth of 0 to three inches and the other from a depth of one foot. The locations and number of these sample points were selected to provide surface soil quality data for areas outside of the runoff collection system and to provide enough data to assess the surface soil conditions across the entire length of the former drainage swale area. Each of the surface soil samples were analyzed for halogenated volatile organics (EPA method 8010), aromatic volatile hydrocarbons (EPA method 8020), and high and low boiling point hydrocarbons, alcohols, and acetone using a modified form of EPA method 8015.

2.2.2 Drainage Swale Subsurface Soil Sampling

Four soil boreholes (B-1 to B-4) were completed within and surrounding the former drainage swale area (Figure 2.1). Boreholes B-1 and B-2 were drilled to the north and east of the runoff collection system and the area of interim soil excavation to establish the effectiveness of these measures at remediating soils containing target constituents. Borehole B-3 was completed west of the runoff collection system to characterize soil quality downslope from the former drainage swale. The location of this borehole was modified from the Sampling and Analysis Plan because it was the opinion of JASCO and EPA that a borehole completed at this location would provide more valuable information than a second borehole drilled to the north of the area of interim soil excavation adjacent to borehole B-2. Borehole B-4 was completed east of borehole B-1. The location of this borehole was modified at time of completion at the request of EPA to provide soil quality data east of borehole B-1 from which soil samples exhibited visual evidence of target constituents. Completion of the borehole at the proposed location was not possible due to the presence of concrete used to fill the area of interim soil excavation. Soil samples were collected at the depth of three feet and at five-foot intervals from the depth of five feet to the depth of groundwater (25 to 30 feet below grade). Each of the soil samples were analyzed for halogenated volatile organics (EPA method 8010), aromatic volatile organics (EPA method 8020), and low boiling point hydrocarbons, alcohols, and acetone using a modified form of EPA method 8015.

2.2.3 Underground Storage Tank Area Subsurface Soil Sampling

One borehole (B-5A) was completed at the eastern edge of the storage tank area to characterize soil quality at an area that had not been characterized during previous investigations (Figure 2.2). Soil samples were collected from the depth of three feet and at five-foot intervals from the depth of five feet to the depth of groundwater (25 to 30 feet below grade). Each of the soil samples were analyzed for halogenated volatile organics (EPA method 8010), aromatic volatile organics (EPA Method 8020), and low boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

2.2.4 Drum Storage Area Subsurface Soil Sampling

Two boreholes (S-7 and V-12) were completed in the vicinity of the drum storage area (Figure 2.2). One shallow borehole (S-7) was completed at the southern edge of the drum storage area immediately adjacent to a drainage outlet from this area. This borehole was completed by hand to a depth of six feet. Two soil samples were collected from the borehole at the depths of three and six feet. Each of the two subsurface soil samples were analyzed for halogenated volatile organics (EPA method 8010), and aromatic volatile organics (EPA method 8020), as well as total low and high boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

One borehole, which was converted to a groundwater monitor well (V-12) was installed just south of the drum storage area. This borehole was located as near the drum storage area and borehole S-7 as possible considering the presence of a chain link fence and trees and the size of the drill rig. Soil samples were collected from the depths of 15, 20 and 25 feet. Shallower samples were not collected because borehole S-7 and boreholes completed during previous investigations have provided data from shallower depths. Each of the samples collected from this borehole were analyzed for halogenated volatile organics (EPA method 8010), and aromatic volatile organics (EPA method 8020), as well as total low and high boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

2.2.5 Background Soil

One borehole, which was converted to a groundwater monitor well (V-11), was drilled in the unpaved area south of the facility near the southwestern property boundary (Figure 2.2). The location of this borehole was chosen to provide background soil quality data. Samples were collected at the depth of two feet and at five-foot intervals from the depth of five feet to the depth of groundwater. Each of these samples were analyzed for halogenated volatile organics (EPA method 8010), and aromatic volatile organics (EPA method 8020), as well as total low and high boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

2.3 GROUNDWATER INVESTIGATIONS

During the course of fieldwork associated with this remedial investigation, two groundwater monitor wells (V-11 and V-12) were installed at the site. With the addition of these two wells, the groundwater monitor well network in the study area consists of 14 wells. Eleven of these wells (V-1, V-3 to V-12) are completed in the A-aquifer. Three of the wells (I-1 to I-3) are completed in the B(1)-aquifer.

Monitor well V-11 was completed in the unpaved area south of the facility near the southwestern property boundary (Figure 2.2) to provide background groundwater quality data. This well was constructed of four-inch diameter Schedule 40 PVC casing with 0.010-inch slots between the depths of 31.5 feet and 41.5 feet. The annular space material consisted of a #2-16 filter pack placed from the total depth to approximately one foot above the slotted interval, overlain by a one-foot thick bentonite seal and plugged to ground surface with a cement/bentonite mix. The well was completed flush to the surface with a christy box. The well was then developed by surging and bailing approximately 330 gallons of groundwater. A groundwater sample was collected from the well using a teflon bailer. Three well volumes of water were removed prior to well sampling. The groundwater sample was analyzed for halogenated volatile organics (EPA method 8010), and aromatic volatile organics (EPA method 8020), as well as total low and high boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

Monitor well V-12 was installed just south of the drum storage area (Figure 2.2). This borehole was located as near the drum storage area and borehole S-7 as was possible considering the presence of a chain link fence and trees and the size of the drill rig. This well was constructed of four-inch diameter Schedule 40 PVC casing with 0.010-inch slots between the depths of 31.5 feet and 41.5 feet. The annular space material consisted of a #2-16 filter pack placed from the total depth to approximately one foot above the slotted interval, overlain by a one-foot thick bentonite seal and plugged to ground surface with a cement/bentonite mix. The well was completed flush to the surface with a christy box. The well was then developed by surging and bailing approximately 275 gallons of groundwater. A groundwater sample was collected from the well using a teflon bailer. Three well volumes of water were removed prior to well sampling. The groundwater sample was analyzed for halogenated volatile organics (EPA method 8010), and aromatic volatile organics (EPA method 8020), as well as total low and high boiling point hydrocarbons, alcohols and acetone using a modified form of EPA method 8015.

The present groundwater monitor well network is monitored on a quarterly basis. The field work associated with the most recent quarterly sampling phase was conducted in July of 1990. Each of the groundwater samples collected were analyzed for volatile organics (EPA method 624) and all but V-5, V-6 and V-7 were also analyzed for acetone and alcohols using a modified form of EPA method 8015. Groundwater samples from selected wells, based upon the findings of previous sampling phases, were also analyzed for phenols (EPA method 604), semi-volatile organics (EPA method 8270) and high boiling point hydrocarbons using a modified form of EPA method 8015.

3.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

3.1 SURFACE FEATURES

The site slopes gently to the north from an elevation of about 64 feet above mean low water (MLW) at the southern property boundary to about 58 feet MLW just north of the Central Expressway. The loading area and parking areas, the driveways and all buildings are surfaced with concrete or pavement. The truck turnaround area and the unused area immediately south of the drum storage area are unsurfaced. The approximately 20-foot wide area between the concrete pad at the northern portion of the facility and the SP rail lines is a shallow depression about one to two feet below the elevation of the concrete pad. The railroad tracks constructed on ballast are slightly higher in elevation than the concrete pad. The northern portion of the SP property slopes gently to the Central Expressway.

3.2 METEOROLOGY

The climate of the Mountain View area is characterized by mild, wet winters and warm, dry summers. Precipitation data has been collected at two locations in the vicinity of the site (Figure 3.1). The Mountain View Corporation Yard data collection point is located about 1.6 miles east of the JASCO facility and the Los Altos Fire Department data collection point is located approximately 2.0 miles southwest of the JASCO facility. Data from the Los Altos Fire Department station was collected between 1965 and 1982 and is shown in Table 3.1. Data from the Mountain View Corporation Yard station was collected between 1974 and 1982 and is shown in Table 3.2. The average seasonal precipitation is approximately 80 mm (3.2 in) greater at the Los Altos station than for the Mountain View site when measured over the identical time periods. The Los Altos station is approximately 100 feet greater in elevation than both the Mountain View Corp. Yard station and the JASCO facility. Because the Mountain View Corp. Yard station is closer to the JASCO facility than the Los Altos station and at approximately the same elevation as the JASCO facility, the data from this station is assumed to better approximate precipitation patterns at the JASCO facility than the Los Altos site. Average monthly rainfall at the Mountain View site ranges from a low of 2.2 mm (0.09 inches) in June to a high of about 76.8 mm (3.0 inches) in January. Nearly 75 percent of the precipitation falls between the months of December and March. Precipitation during the summer months of June, July, August and September account for less than four percent of the average seasonal rainfall. The average seasonal rainfall is 320.4 mm (12.7 inches).

Wind patterns in the Mountain View vicinity are based upon data collected at the Moffett Air Station located about 2.4 miles northeast of the JASCO facility (Figure 3.1). Data from this station was collected between 1962 and 1977 and is summarized in Table 3.3. Wind speeds are greatest during the spring and summer months with an average of 5.7 and 6.0 mph respectively. Wind speed during the fall and winter months average between 4.2 and 4.4 mph. The predominant wind direction is to the north-northwest. The average annual speed of winds in this direction is 8.1 mph. Secondary predominant wind patterns are to the west during the spring and summer months and to the south-southeast during the fall and winter months.

The nearest location from which evaporation data has been collected is at the Alamitos Perc Pond south of the City of San Jose to the southeast of the site. Data collected monthly by the California Department of Water Resources indicates that the average seasonal evaporation rate is approximately 119 mm (4.7 inches) per year.

3.3 SURFACE WATER HYDROLOGY

Surface water runoff in the vicinity of the JASCO site is directed to storm sewer lines which discharge to Permenente Creek located 600 feet to the west of the site. The storm sewer system, however, does not service the JASCO site directly. Surface runoff from the front yard area of the site flows to the north or northeast and collects near the production building. Surface runoff from the rear yard area collects in the drainage swale area. JASCO has installed a runoff management system at the site which directs on-site runoff to several concrete sumps. Runoff is then pumped from the sumps to storage tanks on-site before being discharged to the storm sewer system through above-ground piping.

Off-site runoff between the concrete pad at the northern portion of the facility and the SP rail lines collects in the drainage swale and is directed to the storm sewer system as described in the previous paragraph. Runoff from SP property north of the railroad tracks flows to the southern portion of the Central Expressway and ultimately to storm sewer drains. The Central Expressway is sloped so that runoff is directed to storm sewer drains located at the northern and southern boundaries of the Expressway.

Permenente Creek, located 600 feet to the west of the site, is the nearest surface water body to the JASCO facility. In the vicinity of the site Permenente Creek is a concrete lined drainage approximately ten feet deep. No other surface water bodies are located within one mile of the JASCO facility.

3.4 GEOLOGY

Soil in the vicinity of the site has been mapped as Quaternary fine-grained alluvium (Qhaf) and medium-grained alluvium (Qham) by the U.S. Geological Survey (1). Figure 3.2 shows the distribution of soil types in the vicinity of the site. The surficial geology across the majority of the site is mapped as Qham. The northeastern corner of the site is mapped as Qhaf. The medium and fine-grained alluvium is characteristic of a mid to distal alluvial fan depositional environment and are composed of poorly to moderately sorted, irregularly to well-bedded, low to moderately permeable deposits of clay, silt and clayey silt with occasional beds and lenses of fine to coarse sand. These deposits are Holocene in age (0 to 5,000 years old) and are generally less than 21 feet thick. Interspersed with these deposits, in areas of active stream channels and at depth, are localized deposits of coarse-grained alluvium (Qhac). These deposits represent ancestral stream channels and tend to be of limited lateral extent normal to the course of stream flow but laterally continuous in the direction of stream flow. These deposits are also of Holocene age and generally range from 20 to 50 feet in thickness. To the north of the site at higher elevations the surficial geology consists of older, weakly consolidated, poorly sorted alluvium. These deposits are of late Pleistocene age (10,000 to 3,000,000 years old)

(1) "Flatland Deposits of the San Francisco Bay Region, California - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning" Geological Survey Professional Paper 943, 1979.

3.5 SOIL

The lithology of the vadose zone soil at the JASCO facility, based upon lithologic logs of the boreholes completed as part of this investigation, is highly variable. The borehole lithologic logs for each of the boreholes is presented in Appendix B. In general the lithology consists of irregularly bedded silt, clay, and silty and clayey sand with one continuous bed of coarse sand. This is consistent with the regional geology of the area (see section 3.4 GEOLOGY).

Two lithologic cross sections have been prepared from information gathered during the completion of boreholes and monitor wells at the site between June and August of 1990. Figure 3.3 shows the location of the west to east lithologic cross section across the former drainage swale area and Figure 3.4 shows the actual cross section. The lithology of this area is described further in Section 3.5.1 Drainage Swale Area. Figure 3.5 shows the location of the north to south lithologic cross section and Figure 3.6 shows the actual cross section.

The lithology of the north to south cross section covers a greater distance and is more variable than the east to west cross section. At the northern portion of this cross section from borehole B-2 to B-5A the upper 12 feet consists of clay and clayey sand which corresponds to the lithology of the former drainage swale. Further south along this cross section, however, the lithology grades coarser to interbedded sand, silt, and clay at monitor wells V-11 and V-12. A silt layer encountered between the depths of 12 and 15 feet at borehole B-2 apparently thins to the south and was not encountered at either borehole B-5A or monitor well V-12.

A continuous layer of coarse sand was encountered at the depth of fifteen feet. This sand layer thickens to the south to approximately six feet in the vicinity of the loading area and gradually thins to the south of this area. The coarse sand layer extends to a depth of between 16 and 20 feet. At monitor wells V-12 and V-11 a layer of sandy silt thickening to the south was noted within this coarse sand layer. This coarse sand layer may represent an ancestral stream channel which meanders across the site in a north to south direction.

A continuous layer of silt and silty sand with a thickness of between four and 14 feet was encountered beneath the coarse sand layer which in turn is underlain at the southern portion of the cross section by a clay layer one to eight feet thick. At monitor wells V-12 and V-11 a sand and gravel layer, which thickens to the south, separates these silty and clayey layers. At a depth of between 28 and 30 feet a coarse sand and gravel layer was encountered representing the A-aquifer.

The lithology of the site as presented in the north to south cross section is consistent with the lithology of the site as described during the installation of previous monitor wells at the site. The lithologic logs of several monitor well borings and boreholes from previous investigations is included in Appendix B.

The following sections discuss the lithology of each of the potential source areas at the site based upon data collected during the completion of boreholes and monitor wells between June and August, 1990.

3.5.1 Drainage Swale Area

In the vicinity of the drainage swale lithologic data was collected from four boreholes (B-1 to B-4). Figure 3.4 shows a west to east cross section of the lithology of these boreholes. The upper five to twelve feet consists of clay and clayey sandunderlain by interbedded silt and silty sand to a depth of approximately 15 feet. This silt bed is unconformably underlain by a thin but continuous bed of poorly sorted coarse sand encountered at a depth of approximately 15 feet. This coarse sand bed appears to increase in thickness to the east and may represent an ancestral stream channel centered to the east of borehole B-4. At boreholes B-1, B-2 and B-3 this sand layer was less than one foot thick. At borehole B-4 the sand layer was approximately two feet thick. Between the depths of 16 feet and 28 feet the lithology consists of interbedded sand silt and clay. From the depth of about 28 feet to the total depth of the boreholes the lithology was predominantly sand and gravel representing the A-aquifer.

3.5.2 Underground Storage Tank Area/Loading Area

In the vicinity of the underground storage tank lithologic data were collected from one borehole drilled during this investigation (B-5A). The lithology of this borehole is shown in Figure 3.6 which presents a north to south cross section of the site from the drainage swale to the area south of the southern property boundary of the JASCO facility. The lithology of this area consists of clayey sand from the surface to a depth of approximately 12 feet. Below this area is a bed of coarse sand which corresponds to the coarse sand encountered at the depth of 15 feet in the boreholes completed in the drainage swale area. This layer of coarse sand is approximately five feet in thickness and overlies an approximately five-foot thick layer of silty sand. At a depth of approximately 23 feet a clay bed is encountered which extends to a depth of 30 feet. Sandy clay was encountered below this depth to the depth of groundwater. This lithology is consistent with that of previous boreholes B-5 and B-6 which were completed in June of 1987. The lithologic logs of these boreholes are included in Appendix B.

3.5.3 Drum Storage Area

In the vicinity of the drum storage area and the grassy area to the south, lithologic data was collected from two monitor well borings (V-11 and V-12). The lithology of these wells are shown in Figure 3.6 which presents a north to south cross section of the site from the drainage swale to southern property boundary of JASCO. From the surface to a depth of approximately 15 feet the lithology consists of interbedded sand, silt and clay. At a depth of 15 feet a poorly sorted coarse sand was encountered consistent with that encountered at boreholes completed in the drainage swale and underground storage tank areas. Near the drum storage area this coarse sand bed is approximately three to four feet thick. South of this area the coarse sand is encountered at 15 feet and at 20 feet with a lens of silty sand between 16 and 19 feet. Below this coarse sand the lithology consists of highly variable interbedded clay, silt, sand, and gravel to a depth of 31 to 32 feet. The lithology of this zone appears to be coarser to the south. Below this zone sand and gravel was encountered to the depth of groundwater.

3.6 HYDROGEOLOGY

Three water bearing zones have been identified beneath the site designated as the A-, B(1)-, and B(2)-aquifers in order of increasing depth. The current groundwater monitoring network consists of eleven A-aquifer and three B(1)-aquifer wells as shown in figures 3.8 and 3.9 respectively. Appendix D includes the results of aquifer testing conducted during previous investigations

The A-aquifer, encountered between 25 and 35 feet is of variable thickness and is under confined conditions. Samples of the A-aquifer from within and just above the zone of saturation at monitor well V-11 were collected for sieve analyses. The result of these analysis are shown graphically in Figure 3.7. These data indicate that the saturated zone representing the A-aquifer at monitor well V-11 consists of nearly 80 percent gravel by weight, 14 percent medium to very coarse sand and about six percent clay, silt and fine sand. The zone immediately above the saturated zone which represents a transition between the A-aquifer sediments and the overlying confining layer consists of approximately 27 percent gravel, 39 percent medium to very coarse sand and 34 percent clay, silt and fine sand by weight.

The B(1)-aquifer, encountered between 47 and 56 feet, is separated from the A-aquifer by a clayey aquitard about seven feet thick. The B(2)-aquifer was encountered at one boring at a depth of 57 feet. Selected soil samples collected during the completion of monitor wells I-2 and I-3 in August of 1987 were tested for permeability and grain-size distribution. These data are included in Appendix D. Sieve analyses were conducted on samples collected from between the depths of 47 and 50 feet (B(1)-aquifer) at each of these monitor well locations. These analyses indicated that the B(1)-aquifer consists of 20 to 40 percent gravel, 50 to 65 percent medium to coarse sand, and 10 to 15 percent clay, silt and fine sand.

Permeability data collected during this investigation provided information concerning the effectiveness of confining layers and aquitards. The permeability of the confining layer over the A-aquifer as measured at a depth of between 12 and 14 feet below grade was approximately 2.4×10^{-4} cm/sec (4.7×10^{-4} ft/min). The high values for this layer are attributed to the presence of root casts. The permeability of the aquitards separating the A-aquifer and B(1)-aquifer as measured at a depth of between 26 and 40 feet ranged from 2.8×10^{-6} to 3.1×10^{-7} cm/sec (5.5×10^{-6} to 6.1×10^{-7} ft/min. The permeability of the aquitards beneath the B(1)-aquifer as measured at a depth of 56 to 58 feet below grade ranged from 2.9×10^{-7} to 2.3×10^{-8} cm/sec (5.7×10^{-7} to 4.5×10^{-8} ft/min).

The direction of groundwater flow in the A- and B(1)-aquifers is predominantly to the north-northeast at a gradient of approximately 0.004 ft/ft (vertical feet per linear foot). The direction of groundwater flow in the B(2)-aquifer is presumed to be in a similar direction as the two shallower aquifers. Figures 3.8 and 3.9 show the potentiometric surface of the A-and B(1)-aquifers as of June, 1990. Groundwater flow within the A-aquifer has been affected by the extraction of groundwater from monitor well V-4. The groundwater extraction system at this well has been in operation since April of 1987. Downgradient A-aquifer groundwater flow in the vicinity of this well is deflected towards the well reflecting the affect of pumping. Downgradient of monitor well V-4, A-aquifer groundwater flow appears to be directed along a northeast trending line centered in the vicinity of monitor well V-7. The groundwater flow pattern as shown in Figure 3.8 suggests that flow within the A-aquifer in the vicinity of the site may be preferentially along the path of an ancestral stream channel. The groundwater flow pattern as shown in Figure 3.9 suggests that flow within the B(1)-aquifer is in a more regional and predominantly northerly direction.

Groundwater elevations in both the A- and B(1)-aquifers in the vicinity of the site have shown a downward trend since the first measurements were taken in August of 1987. Table 3.4 shows the historic groundwater levels at the monitor wells at the JASCO site from August 1987 to the present. Groundwater elevations at both aquifers have decreased an average of about five to seven feet since August of 1987. Seasonal variations within this downward trend have been noted with levels rising slightly during the winter months when precipitation is greatest and decreasing more dramatically during the dryer summer months.

In September and October of 1987, a step discharge and constant discharge aquifer test was conducted at monitor well V-4 and slug tests were performed on monitor wells V-1 to V-7 and I-1 to I-3. The step discharge test was conducted to determine the proper pumping rate for the constant rate discharge test. This test indicated that approximately 2.0 gallons per minute was an appropriate pumping rate for the constant discharge test. The average value of the horizontal hydraulic conductivity of the A-aquifer as measured by the constant rate discharge test at monitor well V-4 was 7.9×10^{-2} feet per minute. This figure is an average of calculations based upon the Hantush-Jacob method for leaky confined aquifers, the Jacob straight line method for bounded aquifers with a short distance between the pumping and observation well, and the Jacob solution for recovery data. The average value of transmissivity was 5.53×10^{-2} feet squared per minute and the average value of storativity was 1.52×10^{-3}. The slug test yielded variable values of aquifer parameters in the vicinity of the other A-aquifer monitor wells. Transmissivity ranged from a high of 7.18×10^{-1} feet squared per minute at monitor well V-6 to a low of 1.98×10^{-3} feet squared per minute at monitor well V-5. The values for hydraulic conductivity followed a similar pattern with a high of 1.03×10^{-1} feet per minute at monitor well V-6 and a low of 6.60×10^{-4} feet per minute at monitor well V-5. Values of storativity ranged from a high of 3.67×10^{-2} at monitor well V-2 to a low of 5.88×10^{-10} at monitor well V-1.

The results of the aquifer testing at well V-4 are consistent with an aquifer lithology of silty sand or clean sand which are the types of sediments most commonly found within the A-aquifer. The storativity values of all aquifer testing conducted are consistent with those expected of a confined aquifer with the exception of the result at well V-2 which falls into the range of an unconfined aquifer. These data indicate that, with the exception of the result at monitor well V-2, which has since been destroyed, the A-aquifer is confined by the vadose zone. The seemingly anomalous storativity value recorded at monitor well V-2 may relate to the well construction. Monitor well V-2 is screened through a portion of the vadose zone including the coarse sandy zone at a depth of approximately 15 feet whereas the other A-aquifer wells are screened only across the aquifer dimensions. The groundwater recovery at the three B(1)-aquifer wells was too rapid to allow a representative calculation of aquifer parameters.

3.7 DEMOGRAPHY AND LAND USE

The City of Mountain View has a population of 58,655 and is located within the San Jose metropolitan area which has a population of approximately 1.3 million. The site, which had been zoned for industrial use, was rezoned for residential use in December of 1983. The site is surrounded to the south, west and east by multi-unit residential property. To the north the site abuts property owned and operated by SP. This property is used for commuter and freight rail transport. To the north of the SP property lies the Central Expressway and additional residential property. The nearest area of industrial activity to the site is a dry cleaning establishment approximately 1000 feet to the west of the site.

4.0 NATURE AND EXTENT OF TARGET CONSTITUENTS

4.1 POTENTIAL SOURCES

For the purpose of this investigation, the site is divided into four potential source areas: the former drainage swale area, the underground storage tank area, the former diesel fuel storage tank area and the drum storage area. In addition, the contributions of potential off-site sources of target constituents is also considered. Such potential sources include the SP rail line and the Central Expressway. The following is a more detailed discussion of the potential source areas.

4.1.1 Former Drainage Swale Area

The former drainage swale area refers to an approximately 20 foot wide by 250 foot long portion of land just north of the production area of the JASCO facility. This area is bounded to the north by the railroad ballast of the SP rail line and to the south by the concrete slab of the production area and a fence separating SP property from the adjacent multi-unit residential property. The former swale area extends from the eastern boundary of the JASCO property to approximately 150 feet west of the northwest corner of the JASCO property. Previous to the installation of the stormwater runoff collection system runoff from the northern portion of the JASCO facility, adjacent residential property and the southern portion of SP property collected within this depression. At present the area west of the stormwater runoff collection system has an irregular but relatively flat gradient which results in the ponding of runoff.

During previous soil investigations, the former drainage swale area was identified as a potential source area for the presence of target constituents in soil and groundwater. The reason(s) target constituents are present in the swale cannot be determined with great certainty although the following processes may have occurred:

- accidental spillage of target constituents as raw materials from JASCO's production area

- airborne transport of target constituents from the production area

- release of target constituents through spillage of cargo or equipment emissions from railroad traffic on SP property

- unauthorized disposal of trash by adjacent residents and transients

Minor spills of raw materials used in the production process occur infrequently at the JASCO facility. Such spills are immediately cleaned using absorbent materials and wastes are collected in 55-gallon drums for reclamation. In addition, the production area is bermed to prevent releases of raw materials from this area. Accidental spillage of raw materials previous to the installation of the berm system may have contributed to the presence of target constituents in the former drainage swale area.

The production area lies less than 20 feet south of the former drainage swale. During facility operation the sliding doors on the north and south boundaries of the production area are opened to facilitate ventilation. The movement of volatile organic constituents or other target constituents on airborne particles may have contributed to the presence of target constituents in this area. Such a contribution would likely be limited, however to the presence of target constituents in surface soil.

The two sets of railroad tracks to the north of the production area receive heavy and continuous traffic. This traffic is predominantly commuter traffic related to the Caltrain operation between San Jose and San Francisco; however the tracks are frequently used for freight transport. Emissions from the operation of these trains or spillage of cargo from the freight transport may contribute to the presence of target constituents in this area.

Although fences generally limit access to SP property from the north and south, access to the former drainage swale is possible where Rengstorf Avenue crosses the railroad to the west of the site and through several breaks in the wood fence separating the SP property from an apartment complex west of the site. The former drainage swale in this area is littered with household trash. Aerosol paint cans are commonly found in this area as evidence of the frequent vandalism of block walls and buildings. Such processes may also have contributed to the presence of target constituents in the former drainage swale area.

The drainage swale area as a source for the migration of target constituents to subsurface soil and groundwater has been limited by the implementation of several corrective and preventive measures. Much of the subsurface soil containing the highest concentrations of target constituents have been excavated and disposed off-site (see section 1.2.5). A groundwater extraction program has been implemented at monitor well V-4 to remove affected groundwater and direct it to the City of Mountain View sewage system (see section 1.2.5). The production area and adjacent areas have been bermed to prevent release of raw materials from the JASCO facility and a runoff collection system has been installed to direct surface runoff to a central point where it is then discharged to the City of Mountain View sewage system.

4.1.2 Underground Storage Tank Area

The underground storage tank area consists of eight underground storage tanks of varying size located at the western portion of the JASCO facility just south of the production area. Releases of raw materials in this area may occur through three different pathways:

- o release of raw material to subsurface soil due to the loss of integrity of the tank or associated piping
- o release of raw material to the surface due to spillage during the filling of the tank or the removal of material for use in the production area
- o accidental spillage of raw material to the surface in the vicinity of the underground storage tank area

Currently a an operating leak detection system surrounds the underground storage tank farm (see section 1.2.5) and tank integrity has been further assured in the past through precision testing. These programs have not indicated any loss in tank integrity that would result in the release of target constituents to subsurface soil.

The underground storage tanks are filled by gravity from tanker trucks on a periodic basis. Spillage have occurred during this operation due to improper connections between the truck and fill pipe or the improper use of pumping equipment. Spilled material is immediately cleaned using absorbent materials and wastes are collected in 55-gallon drums. Migration of target constituents as a result of spillage is further limited by the presence of a concrete cap over the underground storage tank farm. The cap covers all of the tank farm with the exception of a small portion surrounding associated piping at the northwestern corner of the tank farm.

Raw material is removed from the tanks through above ground piping by suction. Spillage may have occurred as leakage from the above ground piping. All above ground piping is inspected periodically to ensure its integrity. The transfer of raw material from the piping to the secondary containers is performed within the production areas which are bermed production area to prevent the release of raw materials.

4.1.3 Former Diesel Storage Tank Area

The former diesel storage tank was located at the eastern portion of the site just south of the warehouse area. The tank was removed in October of 1987. Soil samples collected from the excavation indicated the presence of total extractable hydrocarbons at concentrations of 59 ppm and 360 ppm and benzene, toluene, and xylene ranging from 0.39 to 7.8 ppm. Whether the presence of these constituents is due to a leak in the tank or prior spillage during filling or pumping is uncertain. The fill presently within the excavation may represent a potential source of target constituents in subsurface soil and groundwater.

4.1.4 Drum Storage Area

The drum storage area consists of an approximately 20-foot by 120-foot area abutting the separate covered storage area south of the production area and warehouse. This area is used to store empty drums for use or reconditioning. The floor of the drum storage area is concrete and has been bermed. At present the concrete is intact although previously it had been damaged by traffic. The concrete floor is inspected periodically to ensure its integrity and repaired when necessary. Two capped and locked drainage outlets are found on the southern boundary of the storage tank area.

The design of the drum storage area is such as to inhibit the release of target constituents. Releases of target constituents may have occurred in the past through a process which involved the passing of precipitation over the drums, subsequent leaching of target constituents from drum residue and the percolation of this precipitation through cracks in the concrete floor.

4.1.5 Southern Pacific Transportation Company

The northern portion of the JASCO facility abuts property owned and operated by SP. This property is used for rail transportation both passenger and freight. The property receives heavy traffic from Caltrain which operates a commuter train line between San Jose and San Francisco. These commuter trains pass the site frequently each day of the week although traffic is lighter on Saturdays and Sundays. The line also receives frequent freight traffic. Diesel and associated emissions from engines and rail cars passing the site as well as spillage from freight traffic may contribute to the presence of target constituents in the former drainage swale and adjacent areas.

4.1.6 Central Expressway

The Central Expressway is a heavily travelled roadway abutting SP property approximately 150 feet north of the JASCO facility. Automobile emissions associated with traffic from this expressway may contribute to the presence of certain target constituents in the former drainage swale and adjacent areas on the northern portion of the site.

4.2 TARGET CONSTITUENTS

The following list of target constituents represent chemicals which are known to have been used at JASCO or have been otherwise identified in soil and groundwater at the site through previous sampling activities.

- Acetone
- Benzene
- Carbon Tetrachloride
- Chlorobenzene
- Chloroethane
- Chloroform
- 1,1-Dichloroethane (1,1-DCA)
- 1,2-Dichloroethane (1,2-DCA)
- 1,1-Dichloroethene (1,1-DCE)
- 1,2-Dichloroethene (1,2-DCE)
- Aliphatic Hydrocarbons
- Ethylbenzene
- Ethylene Glycol
- Isobutyl Acetate
- Isopropyl Alcohol
- Kerosene
- Lacquer Thinner
- Methyl Alcohol
- Methylene Chloride
- Methyl Ethyl Ketone
- Paint Thinner
- Pentachlorophenol
- Petroleum Naptha
- Phenol
- Tetrachloroethylene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene (TCE)
- Vinyl Chloride
- Xylene

This presence of a target constituent on this list does not necessarily imply that it is currently present at detectable concentrations in soil and groundwater. The fact that a chemical has been used by JASCO in its operations does not imply that a release of the chemical has occurred. In addition, the interim remedial measures already implemented have reduced the concentration and distribution of specific target constituents in several areas.

4.3 SOILS AND VADOSE ZONE

The following sections describe the distribution of target constituents in vadose zone soil at the site separated by potential source area. The laboratory reports for analyses of soil samples collected in association with past investigations are included in Appendix E. Appendix F includes the laboratory reports of soil analyses conducted from June to July of 1990.

4.3.1 Former Drainage Swale Area

The distribution of target constituents in soil within the former drainage swale area is restricted to that portion of the former swale that lies outside of the boundaries of the interim soil excavation area (Figure 1.6). The soil within the area of interim soil excavation, which contained the highest concentrations of target constituents at the site, has been excavated and properly disposed and the excavation has been filled with lean cement to the depth of groundwater. Tables 4.1 to 4.4 summarize the results of analyses conducted on soil samples collected from within the former drainage swale area. The locations of the sample points are shown in Figures 1.4 and 2.1.

4.3.1.1 Halogenated Volatile Organics (EPA methods 8010/8240)

Samples analyzed for volatile organics were collected from the surface and the depth of one foot at four locations along the former drainage swale area in June 1990. The results of these analyses are summarized in Table 4.1. The locations of these sample points are shown in Figure 2.1. No halogenated volatile organic constituents were detected in any of the samples collected from the surface soil. Tetrachloroethene was detected at the one-foot depth at borehole S-5 at the westernmost portion of the drainage swale; however, this constituent was detected at a concentration (0.0054 mg/kg) only slightly greater than the minimum detection limit of 0.005 mg/kg. The difference between these two numbers is within the range of normal laboratory analytical variation. No other halogenated volatile organic constituents were detected at a depth of one foot at the other three sample locations.

In the area bounded to the south by the concrete pad, to the west by borehole S-5, to the north by the railroad ballast and extending to the east as least as far as sample point S-1, the presence of target constituents extends from the depth of three feet to the depth of groundwater. This is based upon data collected from four boreholes (S-1, B-1, B-2 and B-4) completed in July of 1990 (Figure 2.1) and two boreholes (SB-2 and SB-3) completed in May of 1988 (Figure 1.4). The laboratory results are summarized in tables 4.1, 4.2 and 4.3. Concentrations are significantly higher in samples collected from borehole B-1 than at B-2 suggesting that concentrations decrease to the north. Samples collected from borehole B-4 located about 50 feet east of the area of interim soil excavation did not contain detectable concentrations of any volatile organic constituents. The following is a list of halogenated volatile organic constituents which were detected in soil samples collected from this area. The corresponding numbers represent the maximum concentration and depth at which this maximum concentration was recorded. These results are from analyses conducted between June and July of 1990 except for acetone which represents analyses conducted in May of 1988. The samples collected between June and July of 1990 in this area did not contain acetone at concentrations exceeding the minimum detection limit.

CONSTITUENT	MAX. CONCENTRATION	DEPTH
1,1-DCA	3.0 mg/kg	30'
1,1-DCE	1.7 mg/kg	5'
1,2-DCE	0.015 mg/kg	25'
1,1,1-TCA	61.0 mg/kg	5'
acetone	8.8 mg/kg(May,1988)	3'
bromoform	0.17 mg/kg	25'
methylene chloride	4.2 mg/kg	20'
tetrachloroethene	4.0 mg/kg	25'
trichloroethene	0.015 mg/kg	3'

To the west of this area the presence of halogenated volatile organic constituents at detectable concentrations appears to be limited to a area extending from the block wall ten feet north and bounded to the east by the area of interim soil excavation and to the west by borehole SB-15. This is based on data collected from sample points SB-5 to SB-15 completed May 1988 (Figure 1.4), boreholes B-10 to B-12 completed in April 1988 (Figure 1.4) and borehole B-3 completed July 1990 (Figure 2.1). The laboratory results are summarized in tables 4.2, 4.3 and 4.4. At a depth of five feet or greater the presence of volatile organic constituents within this area is restricted to 2-propanone which was detected at concentrations ranging from below detection limits to 5.4 mg/kg in samples collected to a maximum depth of 21 feet in boreholes B-10 and B-11. No target constituents were detected in the soil sample collected from borehole SB-15 approximately 160 feet east of the boundary of the interim soil excavation. Soil samples collected from the depth of three feet at the boreholes located greater than ten feet north of the block wall (SB-5, SB-8, SB-11 and SB-14) did not contain any halogenated volatile organic constituents at concentrations exceeding the minimum detection limit. The following is a list of the halogenated volatile organic constituents detected in soil samples collected from within this area. The corresponding numbers are the maximum concentration in mg/kg and the depth at which this maximum concentration was recorded.

CONSTITUENT	MAX. CONC. (Date)	DEPTH
1,1-DCA	0.61 mg/kg (5/88)	3'
1,1,1-TCA	0.44 mg/kg (5/88)	3'
2-propanone	5.4 mg/kg (6/87)	16'
acetone	86.0 mg/kg (5/88)	3'
methylene chloride	6.2 mg/kg (5/88)	3'
tetrachloroethene	0.24 mg/kg (5/88)	3'

Of the samples collected from this area between June and July, the only halogenated volatile organic constituents which were detected at concentrations above detection limits were tetrachloroethene and 1,1,1-TCA.

4.3.1.2 Total Petroleum Hydrocarbon Analyses (EPA method 8015)

Paint thinner, lacquer thinner, kerosene, gasoline, diesel fuel and oil are mixtures of short and long chain petroleum hydrocarbons that overlap in composition. For this reason the distribution of these constituents will be discussed collectively. Analyses for these constituents in samples collected from boreholes B-1 to B-4 and S-1 to S-6 (Figure 2.1) were divided into two methods based upon boiling point ranges. Concentrations of high-boiling point hydrocarbons represent the longer chain hydrocarbons such as diesel fuel and oil. Low-boiling point hydrocarbons refer to shorter chain hydrocarbons consistent with thinners, kerosene and gasoline. Previous investigations (Figure 1.4) reported such constituents separately as kerosene, paint thinner and lacquer thinner by analyzing samples for a shorter boiling point range corresponding with the typical range of the constituent. The results of analyses are summarized in tables 4.1 to 4.4.

Total petroleum hydrocarbons in the range of diesel fuel and oil are present in soil samples collected from the surface to a depth of six feet ranging in concentration from below one mg/kg to 290 mg/kg at the one-foot depth at sample point S-1. The distribution of soil samples within the former drainage swale area which contain detectable concentrations of high boiling point hydrocarbons extends from borehole S-1 to borehole S-5 (Figure 2.1) and to a maximum depth of six feet although this distribution is not continuous.

In the area bounded to the south by the concrete pad, to the west by borehole S-5, to the north by the northern boundary of the interim soil excavation area and extending to the east as least as far as borehole B-1, the presence of low to medium boiling point hydrocarbons extends from the depth of three feet to the depth of groundwater. This is based upon data collected from four boreholes (S-1, B-1, B-2 and B-4) completed in July of 1990 (Figure 2.1) and two boreholes (SB-1 and SB-2) completed in May of 1988 (Figure 1.4). The laboratory results are summarized in tables 4.1, 4.2 and 4.3. The highest concentrations are noted at borehole B-1 ranging from 6,700 mg/kg at the five-foot depth to 38 mg/kg at the 30-foot depth. At borehole B-2 detectable concentrations were noted only at the depths between 15 and 25 feet indicating that the lateral distribution is limited at shallow depths to the southern portion of this area and increases with depth.

The distribution of low to medium boiling point hydrocarbons in soil samples collected west of the area of interim soil excavation is limited to an area extending from the block wall ten feet north and bounded to the west by borehole SB-12. The distribution of low to medium boiling point hydrocarbons in this area appears to be limited in depth to five feet. Samples collected from the depth of six feet and deeper in boreholes B-3, B-10 and B-11 did not contain detectable concentrations of these constituents. This is based on data collected from sample points SB-5 to SB-15 completed May 1988 (Figure 1.4), boreholes B-10 to B-12 completed in April 1988 (Figure 1.4) and borehole B-3 completed July 1990 (Figure 2.1). The laboratory results are summarized in tables 4.2, 4.3 and 4.4. The concentrations of low to medium boiling point hydrocarbons in this area range from less than 1 mg/kg to 11 mg/kg. Analyses conducted on samples collected from boreholes SB-5 to SB-15 indicated that the composition of low to medium boiling point hydrocarbons in this area is consistent with that of paint thinner.

4.3.1.3 Acetone and Alcohols (EPA method 8015)

Analyses of soil samples collected from the former drainage swale area indicated the presence of methanol, ethanol, isopropanol, acetone and methyl ethyl ketone. The vertical distribution of these constituents appears to be limited to the upper three feet. Samples collected from below the depth of three feet at boreholes, B-1, B-2, B-3, B-4, B-10, B-11, and B-12 did not contain detectable concentrations of any of these constituents.

The lateral distribution of methanol extends across the entire length of the former drainage swale area from borehole SB-1 to borehole SB-15 (Figure 1.4) with a maximum concentration of 60 mg/kg. Methanol was also detected in a background sample (S-6) collected to the north of the SP rail line at a concentration of 25 mg/kg.

The lateral distribution of acetone, isopropanol and ethanol is limited to an area the width of the drainage swale bordered to the east and west by boreholes S-1 and SB-12. The concentration of these three constituents range from less than 0.1 mg/kg to 160 mg/kg with the highest concentrations noted in an area centered around boreholes SB-9 and SB-10. Methyl ethyl ketone was detected only at boreholes SB-9, SB-10 and SB-12 at a maximum concentration of 1.9 mg/kg.

4.3.1.4 Purgeable Aromatics (EPA methods 8020/8240)

Benzene, toluene, xylene and ethylbenzene, which are classified as purgeable aromatic hydrocarbons, may be detected by EPA analytical methods 8020 and 8240 both of which were performed on samples collected from the former drainage swale area. The vertical distribution of these constituents at a depth greater than three feet appears to be limited to an area to the north and east of the area of interim soil excavation. Soil samples from boreholes in this area contained benzene, toluene, xylene, and ethylbenzene to the depth of groundwater at maximum concentrations ranging from 0.12 for benzene to 110 mg/kg for toluene. Benzene was not detected in samples collected from below a depth of three feet in this area.

To the west of the area of interim soil excavation, the lateral distribution of toluene, xylene and ethylbenzene extends to borehole S-5 but is limited in depth to three feet. In this area benzene was only detected only in the surface sample from borehole S-2 at a concentration of 0.0079 mg/kg. The maximum concentrations of toluene, xylene, and ethylbenzene in this area ranged from 1.2 mg/kg to 11 mg/kg.

4.3.2 Underground Storage Tank Area

The presence of target constituents in soil in the vicinity of the underground storage tank area is limited to methylene chloride, 1,2-DCE, methanol, acetone, isopropanol and toluene. Samples were collected for laboratory analyses from four boreholes located at the eastern, western and northern boundary of the underground storage tank area. Boreholes B-5 and B-6 completed in June of 1987 (Figure 1.5) were located at the western boundary of the underground storage tank area. Monitor Well V-3 completed in November of 1986 (Figure 1.5) was located at the northern boundary of the underground storage tank area. Borehole B-5A completed in July of 1990 (Figure 2.2) was located at the eastern boundary of the underground storage tank area. The laboratory results of analyses of samples collected from these locations is summarized in Table 4.5.

The presence of target constituents at in soil in the vicinity of the underground storage tank area does not appear to follow any regular pattern. 1,2-DCE and toluene were detected in samples collected at the 20-foot depth at the eastern edge of the tank area in July of 1990 and toluene was also detected at the 30-foot depth at this location. The concentrations of these constituents in each case (0.010 mg/kg) were only slightly greater than the detection limit of 0.005 mg/kg. No other target constituents were detected in samples collected from this location. At the western edge of the tank area methylene chloride was detected in samples collected from depths between one and 20 feet in June of 1987 ranging from 0.72 to 2.1 mg/kg. No other target constituents were detected in soil samples from this location. At the northern boundary of the tank area acetone, methanol, and isopropanol were detected in samples collected from depths ranging from five to 36 feet in November of 1986 at concentrations ranging from 1.2 to 5.8 mg/kg.

4.3.3 Former Diesel Storage Tank Area

In the vicinity of the former diesel storage tank area laboratory results of soil analyses are available for samples collected from one borehole and from samples collected from the excavation. Borehole B-7 completed in June of 1987 was located about 25 feet downgradient of the former storage tank area (Figure 1.5). The results of these analyses are summarized in Table 4.6. Analyses of soil samples collected from the western wall of the excavation at the time of tank removal indicated the presence of total petroleum hydrocarbons as diesel fuel at 360 ppm and benzene, toluene and xylene ranging from the 0.55 to 9.6 mg/kg. A soil sample collected from the excavation floor immediately below the deepest portion of the former storage tank contained total petroleum hydrocarbons as diesel fuel at 59 mg/kg and benzene, toluene and xylene ranging from 0.39 to 7.8 mg/kg.

The only target constituent detected in samples collected from borehole B-7, downgradient from the former diesel storage tank, was methylene chloride. Because methylene chloride was detected only in the sample collected from a depth of one foot which is above the depth of the former storage tank and because methylene chloride is not a common component of diesel fuel, its presence is not likely to be associated with the former tank area.

4.3.4 Drum Storage Area

In the vicinity of the drum storage area laboratory results of analyses are available for samples collected from four borehole locations. Borehole S-7 and monitor well V-12 were completed just south of the drum storage area adjacent to the eastern drainage outlet in June of 1990 (Figure 2.2). Boreholes B-2 and B-3 were completed just south of the drum storage area adjacent to the western and eastern drainage outlets respectively in June of 1987 (Figure 1.5). The results of analyses of samples collected from these locations is summarized in Table 4.7.

The presence of target constituents in soil at the eastern edge of the drum storage area as indicated by samples collected in July of 1990 appears to be limited to benzene, toluene, ethylbenzene and xylene at depths of less than ten feet. Soil samples collected from the depths of three and six feet at borehole S-7 contained benzene, toluene, xylene and ethylbenzene ranging in concentration from below the detection limit of 0.005 mg/kg to 0.011 mg/kg. No other target constituents were detected in these two samples. No target constituents, including those detected in borehole S-7, were detected in samples collected from the depths of 15, 20 and 25 feet at monitor well V-12 which was completed less than ten feet south of borehole S-7.

Soil samples collected from boreholes completed in June of 1987 indicated the presence of 1,1,1-TCA and methylene chloride ranging from below the detection limit to 2.4 mg/kg but none of the constituents detected in July of 1990. The presence of these two constituents in boreholes B-2 and B-3 were limited to samples collected from the depths of one foot and 20 feet. Soil samples collected from the depths of three and 20 feet at a background location further south of the drum storage area (see section 4.2.5) also contained 1,1,1-TCA at a concentration on the same order of magnitude as at boreholes B-2 and B-3. This suggests that the presence of these constituents in boreholes B-2 and B-3 are not associated with the drum storage area. The decrease in concentrations of target constituents at the 20-foot depth since June of 1987 may reflect variations in groundwater levels which have decreased significantly over this period.

4.3.5 Background Area at Southwestern Property Boundary

Soil samples for laboratory analyses were collected from two background locations upgradient from the site south of the drum storage area. Monitor well V-11 (Figure 2.2) was completed approximately 100 feet south of the drum storage area at the southern edge of JASCO property in July of 1990. Borehole B-1 (Figure 1.5) was completed approximately 60 feet south of the drum storage area and about 40 feet north of the southern edge of JASCO property in June of 1987. The results of laboratory analyses of soil samples collected from these locations are summarized in Table 4.8.

Soil samples were collected from a depth of two feet and at five-foot intervals from a depth of five feet to 30 feet at monitor well V-11. Only one target constituent was detected in any of these samples. The sample collected from the two-foot depth contained high boiling point hydrocarbons at a concentration of 2.5 mg/kg. High boiling point hydrocarbons are consistent with diesel fuel and this result is believed to be associated with the truck traffic over the adjacent driveway.

Soil samples were collected from the depths of three feet and 20 feet at borehole B-1. 1,1,1-TCA was detected at a concentration of 0.28 mg/kg at the three-foot depth and 0.41 mg/kg at the 20 foot depth. No other target constituents were detected in samples collected from this location.

4.4 GROUNDWATER

4.4.1 Identification of Target Constituents Present

The following target constituents have been detected in groundwater samples collected from A- and B(1)-aquifer monitor wells between 1984 and the present:

1,1,1-Trichloroethane	Methanol
1,1-Dichloroethane	Methyl Ethyl Ketone
1,2-Dichloroethane	Methylene Chloride
1,1-Dichloroethene	Pentachlorophenol
4-Butoxybutanoic Acid	Phenol
4-Nitrophenol	Toluene
Acetone (2-Propanone)	TPH as diesel
Benzene	TPH as paint thinner
Ethanol	Trans-1,2-Dichloroethene
Chlorobenzene	Vinyl Chloride
Chloroethane	Xylene
Isopropanol	

Not all of the target constituents listed above are currently present in groundwater at the site. Interim remedial measures have resulted in the decrease in concentration of many of the target constituents detected during earlier sampling phases. Tables 4.9 to 4.23 summarize the results of historic laboratory analyses of groundwater from the monitor wells at the site. The laboratory reports of the analyses of groundwater samples from 1984 to the present are included in Appendix G. The monitor well networks are shown on Figures 3.8 and 3.9. The following is a discussion of the distribution of target constituents in groundwater at the site at present.

4.4.2 A-aquifer

The following 14 target constituents have been detected in groundwater collected from the A-aquifer monitor wells over the past four sampling periods (December 1989 to July 1990):

Halogenated Volatile Organics	Non-Halogenated Organics
1,1,1-Trichloroethane	Acetone
1,1-Dichloroethane	Ethanol
1,1-Dichloroethene	Isopropanol
Chloroethane	Methanol
Methylene Chloride	TPH as diesel
Vinyl Chloride	Toluene

<u>Phenolic Compounds</u>
4-Nitrophenol
Pentachlorophenol

4.4.2.1 Distribution of Halogenated Volatile Organic Constituents

The presence of chloroethane and vinyl chloride at present based upon the analyses of samples collected in July of 1990 is limited to monitor well V-4. The presence of methylene chloride based upon the analyses of samples collected in July of 1990 is limited to monitor wells V-1 and V-3 at the northern portion of the underground storage tank area. The distributions of 1,1-TCA, 1,1-DCA and 1,1-DCE follow a similar pattern with the highest concentration at monitor V-4 and decreasing concentrations to the north in the general direction of groundwater flow. The flow pattern for these three constituents are shown graphically in figures 4.1, 4.2 and 4.3.

4.4.2.2 Distribution of Non-Halogenated Volatile Organic Constituents

At present, based upon the results of analyses conducted in April and July of 1990, the only non-halogenated volatile organic constituent present in A-aquifer groundwater is high boiling point hydrocarbons. During the sampling phase conducted in July of 1990, high boiling point hydrocarbons were detected only at monitor wells V-1 and V-3 at the northern edge of the underground storage tank area and at monitor well V-4 at the eastern edge of the former drainage swale area. The concentration of high boiling point hydrocarbons in groundwater collected from these wells was highest at monitor well V-1 (0.65 mg/kg) and lower at monitor wells V-4 (0.35 mg/l) and V-3 (0.15 mg/l).

4.4.2.3 Distribution of Phenolic Compounds

Pentachlorophenol and 4-Nitrophenol were detected in groundwater collected from monitor well V-1 in April of 1990 at concentrations slightly greater than the minimum detection limit of 0.02 mg/l. Samples collected from this well in July of 1990 did not contain detectable levels of these constituents. Pentachlorophenol had been detected at the detection limit in a groundwater sample collected from monitor well V-1 in July of 1984 but aside from the result of the April 1990 sampling neither of these two phenolic compounds had been detected in the ten subsequent sampling phases.

4.4.3 B(1)-Aquifer

At present, based upon the analyses of groundwater samples collected in July of 1990, the only target constituents present in the B(1)-aquifer are 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethane at monitor well I-2 and phenol at monitor well I-3. No target constituents have been detected in groundwater samples collected from monitor well I-1 located at the eastern edge of the former drainage swale area during the last four sampling phases.

The presence of volatile organic constituents in groundwater collected from monitor well I-2, directly downgradient from the former drainage swale area, has been relatively constant over recent sampling phases; however the concentrations of these constituents are only slightly greater than the minimum detection limit of 0.002 mg/l.

Phenol was detected in the groundwater sample collected from monitor well I-3 at a concentration of 0.0036 mg/l or slightly greater than the detection limit of 0.002 mg/l. Phenol had been detected in groundwater collected from this well in September of 1987, but the concentration had not exceeded the minimum detection limit during the previous two sampling phases in August of 1989 and January of 1990.

The source of these constituents in the B(1)-aquifer are uncertain although it is possible that target constituents may have migrated from potential source areas through the overlying vadose zone soil, the A-aquifer and the aquitard separating the A- and B(1)-aquifers. Potential pathways for this migration include downward migration through porous zones within the overlying soil, and the downward movement of A-aquifer groundwater in wells completed in the B(1)-aquifer at the time of installation or within wells with screened intervals which bridge the aquitard separating the two uppermost aquifers. The potential for these processes is discussed in greater detail in Section 5.0 Potential Conduits and Section 6.3 Target Constituent Migration.

5.0 POTENTIAL CONDUITS

A potential conduits investigation was prepared for the site in May of 1988. The report identified a number of subsurface structures in the vicinity of the JASCO site and presented data concerning the potential for these structures to provide conduits for the migration of target constituents. These included water supply wells in the vicinity of the site, monitor wells installed during the investigation of JASCO, underground utilities and the Hetch-Hetchy Aqueduct. The report included the following conclusions concerning the presence of potential conduits at the JASCO site.

1.) Water producing wells identified in the vicinity of JASCO have either been destroyed or are located cross-gradient of the site and unlikely to serve as potential conduits.

2.) Monitor wells constructed in association with the investigation of the site were installed and sealed according to Santa Clara Valley Water District guidelines and are unlikely to serve as potential conduits.

3.) Underground utilities in the vicinity of the site are less than 12 feet in depth, do not extend to the depth of groundwater and are unlikely to serve as potential conduits.

4.) The Hetch-Hetchy Aquaduct in the vicinity of the site is constructed to a maximum depth of 12 feet, does not extend to the depth of groundwater and is unlikely to serve as a potential conduit.

A copy of this investigation is included in Appendix H. Several additional potential conduits have been identified since the completion of this report. Two additional wells have been installed in association with this remedial investigation and one existing monitor well (V-1) has been identified as a potential conduit for the movement of target constituents within the aquitard separating the A- and B(1)-aquifers. These are discussed in greater detail below.

5.1 CONSTRUCTION OF WELLS ASSOCIATED WITH REMEDIAL INVESTIGATION

Monitor wells V-11 and V-12 were installed in July of 1990 in association with this remedial investigation. The construction details of these two wells are shown in the following table.

WELL CONSTRUCTION - MONITOR WELLS V-11 AND V-12

Monitor Well V-11

State Well Number:	06S2W21F07A
Status:	Active
Date Drilled:	June 20, 1990
Well Depth:	42 feet
Bore Diameter:	10 inches
Casing Diameter:	4 inches
Driller:	Aqua Science Engineering
Drilling Method:	Hollow Stem Auger
Gravel Pack:	Monterey #2-16
Screened Interval:	32 feet to 42 feet
Slot Thickness:	0.010 inches
Surface Seal:	0 feet to 29 feet, bentonite and grout

Monitor Well V-12

State Well Number:	06S2W21F08A
Status:	Active
Date Drilled:	June 21, 1990
Well Depth:	42 feet
Bore Diameter:	10 inches
Casing Diameter:	4 inches
Driller:	Aqua Science Engineering
Drilling Method:	Hollow Stem Auger
Gravel Pack:	Monterey #2-16
Screened Interval:	32 feet to 42 feet
Slot Thickness:	0.010 inches
Surface Seal:	0 feet to 29 feet, bentonite and grout

These two wells are located outside and upgradient of the known A-aquifer target constituent plume and do not penetrate the B(1)-aquifer. These wells were constructed according to Santa Clara Valley Water District (SCVWD) guidelines and the surface seal was inspected by a SCVWD inspector at the time of construction. For these reasons, it is extremely unlikely that these wells could serve as a vertical conduit for migration of target constituents.

5.2 CONSTRUCTION OF MONITOR WELL V-1

Monitor well V-1 was installed in May of 1984 at the northeastern corner of the underground storage tank area. The monitor well boring extended to a depth of 50 feet. The borehole log of the monitor well boring (Appendix B) indicates that the aquitard separating the A- and B(1)-aquifers was penetrated as was the upper two feet of the B(1)-aquifer between the depths of 48 and 50 feet. During installation of the well the two-foot portion of the B(1)-aquifer penetrated was sealed with a mixture of bentonite and cement; however screened casing was installed between the depths of 28 and 48 feet. The borehole log of monitor well V-3 just west of monitor well V-1 (Appendix B) indicates that the A-aquifer in this area extends between the depths of 30 and 35 feet. This information indicates that monitor well V-1 is screened through both the A-aquifer and a significant portion of the aquitard separating the B(1)-aquifer. The potential for vertical migration of target constituents between these two aquifers is discussed in greater detail in section 6.3 Target Constituent Migration.

6.0 TARGET CONSTITUENT FATE AND TRANSPORT

6.1 POTENTIAL ROUTES OF MIGRATION

Four potential pathways for the migration of target constituents from the site have been identified. The following is a discussion of the mechanisms for the migration of target constituents through each potential pathway.

6.1.1 Vadose Zone Soil

Target constituents may migrate both vertically and laterally within the soil of the vadose zone (the area between the ground surface and the top of the uppermost aquifer). The mechanism by which this occurs is most commonly through the downward movement by gravity through interconnected pore space. Variations in soil type and layering may also result in preferential movement horizontally. The potential for migration by this method is dependant upon characteristics of the soil media, the type of chemical, and the meteorology of the area. Conditions which may facilitate percolation of constituents in vadose zone soil include coarse soils with high porosity and permeability, highly soluble or non-volatile constituents, and high rates of precipitation. Target constituents may migrate either in a liquid state through pore space or in a dissolved state in soil moisture. The percolation of precipitation or other surface runoff is the most common source of soil moisture. Vertical migration of target constituents may also occur in the zone immediately above the saturated zone through variations in groundwater levels or by capillary action.

6.1.2 Groundwater

Lateral and vertical migration of target constituents may also occur within various aquifers underlying the site. The potential for lateral movement of target constituents within groundwater is dependant upon the solubility and specific gravity of the chemical in question, the groundwater flow patterns and aquifer parameters such as hydraulic conductivity. Vertical movement of target constituents within groundwater is dependant predominantly on the specific gravity of the chemical in question. Those constituents heavier than the groundwater will have a tendency to migrate downward by gravity while those constituents lighter than the groundwater will float or stay suspended in the upper portion of the aquifer.

The potential for vertical migration of target constituents in underlying aquifers is dependant on the depth of the source of target constituents, and the stratigraphy, lithology and engineering properties of the subsurface soil. The factors governing migration within such saturated and unsaturated zones are similar to those discussed in the previous paragraph and in the section discussing the vadose zone.

6.1.3 Man-Made Potential Conduits

Man-made potential conduits, depending on their orientation, may facilitate the lateral or vertical migration of target constituents in subsurface soil and groundwater. In the vicinity of the site such conduits include gravel packs and casings associated with water supply or monitor wells and utility lines such as sewers, buried telephone and electrical lines and buried aqueducts.

6.1.4 Surface Pathways

Lateral migration of target constituents from the site may occur at the ground surface through the movement of fluid constituents or dissolved constituents in surface runoff along natural or engineered slopes or drainages.

6.1.5 Air Pathways

Lateral migration of target constituents from the site may occur as the result of volatilization of constituents to the atmosphere or the adsorption of constituents on wind blown dust. The potential for such migration is dependant upon the volatility of the chemical in question and the meteorology of the area.

6.2 TARGET CONSTITUENT PERSISTENCE

The target constituents present at the site can be divided into three categories: halogenated volatile organic constituents, non-halogenated organic constituents and phenolic compounds.

The halogenated volatile organic constituents identified at the site are generally highly volatile and moderately to highly soluble. An exception to this is vinyl chloride which has a low solubility. Such constituents would not be expected to be persistent in near surface soils although at depth and in groundwater they would be much more persistent due to their solubility in groundwater and vadose zone moisture. Such constituents at low concentrations would be expected to be very persistent due to their presence in water held on soil particles by molecular attraction and between particles by capillary action. Both of these processes act against the force of gravity inhibiting downward migration. In addition, chlorinated hydrocarbons are not readily biodegradable by naturally occurring soil organisms.

The phenolic compounds identified in soil and groundwater at the site tend to be of low to medium solubility and are in general are not highly volatile. Such constituents would tend to be very persistent in subsurface soil and groundwater. The presence of phenolic compounds in soil and groundwater at the site, however, is very limited and where they have been identified they have been present at concentrations only slightly greater than minimum detection limits.

The non-halogenated volatile organic constituents identified at the site include alcohols (methanol, ethanol, isopropanol) and mixtures of short- and long-chain petroleum hydrocarbons such as paint thinner, lacquer thinner, and diesel fuel. The alcohols are miscible with water and are moderately volatile. Such constituents would not be expected to be persistent at shallow depths in soil due to volatilization and downward migration of soil moisture except at low concentrations. Such constituents would be more persistent in groundwater due to their miscibility with water. The shorter chain petroleum hydrocarbons which generally include thinners and gasoline tend to be moderately to highly volatile with low solubility. Such constituents would not be highly persistent in at shallow depths in soil due to their volatility and because they tend to be readily biodegradable by naturally occurring soil organisms under aerobic conditions. These constituents are more persistent in groundwater as they tend to be lighter than water and remain as free product floating on the groundwater surface. The longer chain petroleum hydrocarbons, predominantly diesel fuels, are less volatile and not readily biodegradable and tend to be very persistent in subsurface soil and groundwater.

6.3 TARGET CONSTITUENT MIGRATION

6.3.1 Vadose Zone Soil

Migration of target constituents through vadose zone soil at the site has occurred in several areas. The apparent mechanism for this process is downward migration of precipitation and surface runoff through soil containing target constituents. Target constituents in the soil are leached by the percolating moisture and migrate downward by gravity. The presence of sandy zones and root casts facilitates this process. The soil of the vadose zone consists predominantly of clay and silt although coarse material is present in discontinuous zones and root casts are also abundant. The coefficient of permeability in the upper 15 feet of sediment as measured between the depths of 12 and 15 feet at monitor wells I-2 and I-3 was approximately 2.4×10^{-4} cm/s (Appendix C). This high value for clayey soils is attributed to the presence of root casts. Lateral migration of target constituents through this zone is likely limited to normal spreading of the plume of constituents with depth and movement along sandy interbeds such as that encountered at a depth of 15 feet.

The vertical migration of target constituents in vadose zone soil is further limited by surface conditions. In the vicinity of the former drainage swale area downward percolation of precipitation and runoff is prevented by the runoff collection system which directs runoff to a sump for later discharge to the local sewer system.

A laterally continuous bed of coarse sand of higher permeability was penetrated at a depth of approximately 15 feet below grade at each borehole completed at least to this depth. In the vicinity of the former drainage swale area, the concentrations of target constituents in soil at this depth are generally greater than in samples collected from the finer sediments above and below indicating that the horizontal migration of target constituents in this zone is greater than in the overlying and underlying zones.

The vadose zone between the coarse sand layer and the A-aquifer consists of interbedded clay, silt and sand. The coefficient of permeability of this layer as measured at the depth of 26 feet at monitor well I-3 was 2.8×10^{-6} (Appendix C). Vertical migration of target constituent is likely to be limited to the percolation of soil moisture through coarser interbeds. Lateral migration of target constituents is likely limited to normal spreading of the constituent plume with depth and migration along sandy interbeds. Lateral migration may also occur in the vadose zone just above the saturated zone due to migration of target constituents in groundwater combined with variations in groundwater levels and the capillary fringe. The concentrations of several target constituents in samples collected from depths between 25 and 30 feet in the former drainage swale area were higher than in samples collected from the depth of 20 feet suggesting that this process may be taking place. Groundwater levels in the A-aquifer have decreased steadily over the past several years and may have resulted in the deposit of residual amounts of constituents held on soil particles by molecular attraction and by capillary forces.

6.3.2 Groundwater

Lateral migration of target constituents has occurred within the A-aquifer. The mechanism for this migration appears to be through downgradient migration of dissolved constituents in groundwater. The direction of this migration is to the north as shown in figures 4.1, 4.2 and 4.3. The stability of the concentrations of target constituents in downgradient monitor wells V-7, V-8 and V-9 suggest that the rate of migration is slow. The groundwater flow gradient is estimated at 0.004 ft/ft.

Migration of target constituents from the drainage swale area appears to be limited to the more mobile chlorinated hydrocarbons such as 1,1,1-TCA, 1,1-DCA and 1,1-DCE and acetone. Less mobile target constituents such as alcohols and petroleum hydrocarbon mixtures have not been detected in monitor wells downgradient from the former drainage swale and underground storage tank areas.

Vertical migration of target constituents may also have occurred as evidenced by the presence of target constituents in groundwater collected from monitor wells I-2 and I-3 which were completed in the B(1)-aquifer. The presence of these constituents may not be attributed directly to the downward migration of constituents through the A-aquifer and underlying aquitard. The aquitard separating the A-aquifer and B(1)-aquifer has an estimated coefficient of permeability of 3.1×10^{-7} cm/sec as measured at the depth of 37 feet at monitor well I-3. The concentrations of target constituents at monitor wells I-1 and I-2 were greatest in August and September of 1987 corresponding with the date these wells were installed. Concentrations have decreased since this time. No target constituents have been detected in groundwater samples collected from monitor well I-1 since August of 1987. Concentrations of target constituents in monitor well I-2 are stable but decreased from those recorded in August of 1987. The temporal variation of these constituents suggest that the presence of these constituents may represent a single release with a plume of three volatile organic constituents currently centered downgradient of the former drainage swale area and that the source of this vertical migration is no longer present. Such a release may have occurred during the installation of the one of the wells. If this were in fact the pathway, the magnitude of the release would have been limited since the A-aquifer was sealed with conducted casing at each B(1)-monitor well location before drilling was continued to the B(1)-aquifer. Concentrations of the three target constituents originally detected in these two boreholes have been below, at, or very slightly greater than the minimum detection limit.

The coefficient of permeability of the aquitard separating the B(1)-aquifer and B(2)-aquifer as measured at depths between 56 and 58 feet at monitor wells I-2 and I-3 ranges from 2.9×10^{-7} to 2.3×10^{-8} cm/sec. The migration of target constituents through this aquitard is unlikely. No groundwater quality data is available for the B(2)-aquifer.

6.3.3 Man-Made Conduits

A potential conduits investigation has been prepared for the site (Appendix H) and additional information has been provided in Section 5.0 of this document. These data indicated that, with the exception of monitor well V-1, the potential conduits present in the vicinity of the site are unlikely to facilitate the vertical or lateral migration of target constituents at the site.

Water supply wells in the vicinity of the site do not intersect potential source areas of the site or known areas to which target constituents have migrated. All monitor wells near the potential source areas and downgradient from these areas were completed according to Santa Clara Valley Water District (SCVWD) guidelines and inspected by SCVWD inspectors when required. Utility excavations in the vicinity of the site do not extend to the water table or provide a pathway to facilitate lateral migration of target constituents.

The perforated portion of monitor well V-1 located at the northeastern corner of the underground storage tank extends across both the A-aquifer and a significant portion of the aquitard separating the A- and B(1)-aquifers. Although the section of the B(1)-aquifer which had been penetrated during the installation of this well was sealed with a mixture of bentonite and cement, the casing provides a potential pathway for target constituents to migrate through the aquitard to a depth just above the level of the B(1)-aquifer. The groundwater elevation at monitor well V-1 has consistently been 0.2 to 0.5 feet higher than at monitor well V-3 which was completed only in the A-aquifer just west of monitor well V-1. The difference in water level in these two adjacent wells suggests that monitor well V-1 is being affected by movement of water from a source other than the A-aquifer. The historic groundwater levels recorded at monitor well V-1 are more consistent with that of the B(1)-aquifer flow pattern than the A-aquifer flow pattern suggesting that monitor well V-1 has been affected by flow from the B(1)-aquifer.

The potential for vertical migration of target constituents from the A-aquifer to the B(1)-aquifer is limited due to the difference in hydrostatic pressure within the two aquifers. Historic groundwater elevations have been consistently 0.2 to 0.4 feet greater in the B(1)-aquifer wells than the A-aquifer wells indicating that the hydrostatic pressure within the B(1)-aquifer is greater than that within the A-aquifer. Under such conditions, flow within a conduit bridging these two aquifers would have a tendency to be in an upwards direction from the B(1)-aquifer to the A-aquifer.

6.3.4 Surface Pathways

The former drainage swale area prior to the implementation of the surface runoff collection system was an apparent pathway for the lateral migration of target constituents in liquid form or dissolved in surface runoff. Lateral migration may also have occurred within the production area and drum storage areas. With the installation of the surface runoff collection system the lateral migration of runoff away from the former drainage swale area is significantly limited. Runoff flowing over the former drainage swale area is presently directed towards a sump at the southeastern portion of the former swale and subsequently pumped via above ground piping to the City of Mountain View sewer system. The lateral migration of target constituents from the production, warehouse and drum storage areas has been limited by the construction of concrete berms around these areas. As a result of these measures there is little potential for the further migration of target constituents away from the source areas via surface pathways.

6.3.5 Air Pathways

Migration of target constituents through air pathways at the site may occur by two processes: volatilization to the atmosphere or as adsorption on wind-blown particles. The presence of target constituents in samples collected from the surface of the drainage swale area, the area which historically has contained the highest levels of constituents at the site, is limited to benzene, toluene, xylene and low to medium and high boiling point hydrocarbons. Benzene, toluene, and xylene are present at concentrations below or slightly greater than the minimum detection limit of 0.005 mg/kg in these samples. High boiling point hydrocarbons are not highly volatile. Unless the areas of near surface soil containing detectable concentrations of target constituents are disturbed, the migration of constituents by air pathways is unlikely.

The results of the Endangerment Assessment prepared in August of 1989 (Appendix I) indicated that the potential for volatilization and eolian transport of target constituents from the site is low. This is due to the low levels of constituents identified in surface soils, the cementation of soils in the potential source areas and the location of the most affected areas away from normal work areas.

7.0 BASELINE RISK ASSESSMENT

An Endangerment Assessment for the JASCO site was prepared by Jacobs Engineering Group Inc., an EPA consultant, in August of 1989. A copy of this Endangerment Assessment is included in Appendix I.

Results of this assessment indicated that there were significant carcinogenic risks associated with the consumption and inhalation of vapors from the groundwater of the A-aquifer. The results of this assessment also indicated that there were significant non-carcinogenic risks associated with the consumption of groundwater from the A-aquifer. The calculations used in making these determinations, however, were based in part upon the highest concentration of target constituents which in many cases are significantly greater than the current maximum concentrations of indicator constituents detected in A-aquifer groundwater.

The results of this Endangerment Assessment indicated that there is no significant carcinogenic or non-carcinogenic risk associated with exposure to on-site soils via incidental ingestion or fugitive dust inhalation.

8.0 SUMMARY AND CONCLUSIONS

8.1 SUMMARY

8.1.1 NATURE AND EXTENT OF TARGET CONSTITUENTS

The following is a summary of the concentrations and distribution of target constituents at the site separated by potential source areas.

8.1.1.1 Former Drainage Swale Area

In the former drainage swale area the extent of vadose zone soil containing detectable concentrations of target constituents is divided into two different areas based on depth. The area outside of the area of interim soil excavation bounded to the north by the ballast of the railroad tracks, to the south by the concrete pad, to the west by borehole S-5 and extending to the east as least as far as borehole B-1 contains detectable concentrations of target constituents from the surface to the depth of groundwater. The following target constituents were detected in soil samples collected from this area. The corresponding numbers represent the maximum concentration, the date of sample collection and depth at which this maxiumum concentration was detected.

CONSTITUENT	MAX. CONCENTRATION in mg/kg (Date)	DEPTH
1,1-DCA	3.0 (7/90)	30'
1,1-DCE	1.7 (7/90)	5'
1,2-DCE	0.015 (7/90)	25'
1,1,1-TCA	61.0 (7/90)	5'
acetone	8.8 (5/88)	3'
benzene	0.12 (6/90)	1'
bromoform	0.17 (7/90)	25'
ethanol	0.7 (5/88)	3'
ethylbenzene	0.37 (6/90)	1'
isopropanol	76.0 (7/90)	3'
methanol	60.0 (7/90)	3'
methylene chloride	4.2 (7/90)	20'
toluene	110.0 (7/90)	5'
tetrachloroethene	4.0 (7/90)	25'
trichloroethene	0.015 (7/90)	3'
TPH as kerosene	10.0 (5/88)	3'
TPH as paint thinner	5.2 (5/88)	3'
TPH (high boiling point)	290.0 (6/90)	1'
TPH (low to medium b.p.)	6,700.0 (7/90)	5'
xylene	37.0 (7/90)	5'

The concentrations are the greatest in the vicinity of boreholes B-1 and S-1 and decrease outward from these two locations in all directions. Samples collected from borehole B-4 located about 50 feet east of the area of interim soil excavation did not contain detectable concentrations of any volatile organic constituents. The vertical distribution of acetone, benzene, methanol, ethanol, isopropanol, and methyl ethyl ketone in this area appears to be limited in depth to five feet. Samples collected from below the depth of three feet at boreholes, B-1, B-2 and B-4 did not contain detectable concentrations of any of these constituents.

To the west of this area of interim soil excavation the presence of target constituents at detectable concentrations appears to be limited to a depth of three feet with the exception of 2-propanone, toluene and xylene. Xylene was detected below a depth of three feet at only one location (B-12) where it was detected at 0.17 mg/kg at a maximum depth of six feet. Toluene was detected at a concentration slightly exceeding the detection limit of 0.005 mg/kg at only one location (B-3) and then only at a depth of 25 feet. Concentrations of 2-propanone ranging from below detection limits to 5.4 mg/kg were detected in samples collected to a maximum depth of 21 feet in boreholes B-10 and B-11. The following is a list of the target constituents detected in soil samples collected from within this area. The corresponding numbers represent the maximum concentration in mg/kg, the date of sample collection and the depth at which this maximum concentration was detected.

CONSTITUENT	MAX. CONCENTRATION in mg/kg (Date)	DEPTH
1,1-DCA	0.61 (5/88)	3'
1,1,1-TCA	0.44 (5/88)	3'
2-propanone	5.4 (6/87)	16'
acetone	100.0 (5/88)	3'
benzene	0.0079 (6/90)	1'
ethanol	3.4 (5/88)	3'
ethylbenzene	1.2 (5/88)	3'
isopropanol	164.0 (5/88)	3'
methanol	9.0 (5/88)	3'
methylene chloride	6.2 (5/88)	3'
methyl ethyl ketone	1.9 (5/88)	3'
tetrachloroethylene	0.24 (5/88)	3'
toluene	8.2 (5/88)	3'
TPH as diesel	14.0 (6/87)	6'
TPH as paint thinner	170.0 (5/88)	3'
TPH (high b.p.)	48.0 (6/90)	1'
TPH (low-med b.p.)	1.4 (6/90)	0.5'
xylene	11.0 mg/kg	3'

Most maximum concentrations were noted in samples collected from the depth of three feet from locations approximately 30 feet east of the area of interim soil excavation.

The distribution of halogenated volatile organic constituents and low to medium boiling point hydrocarbons within this area is generally limited to the southern portion less than ten feet north of the block wall. Soil samples collected from the depth of three feet at the boreholes located greater than ten feet north of the block wall (SB-5, SB-8, SB-11 and SB-14) did not contain any halogenated volatile organic constituents at concentrations exceeding the minimum detection limit. None of these target constituents were detected in the soil sample collected from borehole SB-15 approximately 160 feet west of the boundary of the interim soil excavation.

The lateral distribution of acetone and alcohols extends across the entire length of the former drainage swale area from borehole SB-1 to SB-15 (Figure 1.4) however the highest concentrations are centered around boreholes SB-9 and SB-10. The lateral distribution of toluene, xylene and ethylbenzene extends across the length of the former drainage swale area from between boreholes S-1 and S-5. In this area benzene was detected only in the surface sample from borehole S-2.

8.1.1.2 Underground Storage Tank Area

The presence of target constituents in soil in the vicinity of the underground storage tank area is limited to methylene chloride, 1,2-DCE, methanol, acetone, isopropanol and toluene. The presence of target constituents in soil in the vicinity of the underground storage tank area does not appear to follow any regular pattern either laterally or at depth. Toluene and 1,2-DCE were detected at concentrations slightly greater than the minimum detection limit of 0.005 mg/kg in samples collected at depths between 20 feet and 30 feet to the east of the storage tank area. At the western boundary of the tank area methylene chloride was detected between the depths of one foot and 20 feet in June of 1987. In November of 1986, acetone, methanol and isopropanol were detected at the northern portion of the tank area between the depths of five and 36 feet.

8.1.1.3 Former Diesel Fuel Tank Area

Analyses of soil samples collected from the excavation at the time of tank removal indicated the presence of total petroleum hydrocarbons as diesel fuel at concentrations between 59 and 360 mg/kg and benzene, toluene and xylene ranging from the 0.39 to 9.6 mg/kg. Soil samples collected between the surface and the depth of groundwater at downgradient borehole B-7 did not contain detectable concentrations of any of the constituents indicating a lack of downgradient migration of these constituents. Methylene chloride was detected in a sample collected from this borehole, however, it was detected only at a depth of one foot which is above the level of the former storage tank and its presence is not likely to be associated with the former storage tank area.

8.1.1.4 Drum Storage Area

The presence of target constituents in soil at the eastern edge of the drum storage area as indicated by samples collected in July of 1990 is limited to benzene, toluene, ethylbenzene and xylene at depths of less than ten feet. Methylene chloride and 1,1,1-TCA had been detected in samples collected from the depths of one foot and 20 feet in June of 1987 however 1,1,1-TCA was also detected in samples collected from the depths of three and 20 feet at a background location upgradient of the drum storage area. The presence of 1,1,1-TCA in background samples at similar concentrations and depths as the presence in samples collected from the drum storage area suggests that the drum storage area may not be the source for these constituents.

8.1.1.5 Background Locations

Soil samples collected from the surface and a depth of one foot at a location to the north of the SP railroad tracks contained detectable concentrations of toluene, xylene, ethylbenzene and methanol. Purgeable aromatic constituents (benzene, toluene, xylene and ethylbenzene) are common components of automobile fuel. Automobile traffic from the Central Expressway and adjacent roadways has likely contributed to the presence of these constituents in the background sample and at the borehole locations located within the former drainage swale area. A near surface soil sample collected from a background location to the south of the drum storage area contained high boiling point hydrocarbons at a detectable concentration consistent with the presence of diesel fuel. The presence of this constituent is attributed to truck traffic in this area. No target constituents were detected in soil samples collected at deeper depths at this location.

8.1.1.6 A-Aquifer

The following 14 target constituents have been detected in groundwater collected from the A-aquifer monitor wells over the past four sampling periods (December 1989 to July 1990):

Halogenated Volatile Organics	Non-Halogenated Organics
1,1,1-Trichloroethane	Acetone
1,1-Dichloroethane	Ethanol
1,1-Dichloroethene	Isopropanol
Chloroethane	Methanol
Methylene Chloride	TPH as diesel
Vinyl Chloride	Toluene

<u>Phenolic Compounds</u>
4-Nitrophenol
Pentachlorophenol

The distribution of halogenated volatile organic constituents is generally limited to the area near the eastern portion of the former drainage swale area and downgradient of this area. Of the halogenated volatile organic constituents detected in monitor wells V-1, V-3 and V-4 only 1,1,1-TCA, 1,1-DCA and 1,1-DCE are currently present at detectable concentrations in downgradient monitor wells. The presence of chloroethane and vinyl chloride in A-aquifer groundwater is limited to monitor well V-4 at the eastern portion of the former drainage swale area and the presence of methylene chloride is limited to monitor wells V-1 and V-3 north of the underground storage tank area. The distribution of 1,1,1-TCA, 1,1-DCA, and 1,1-DCE, is limited to monitor wells V-1, V-3 and V-4 and several downgradient monitor wells.

At present the only additional target constituents currently present in A-aquifer groundwater are high boiling point hydrocarbons which are present at monitor wells V-1 and V-3 and V-4 and pentachlorophenol and 4-nitrophenol which are present only in monitor well V-1. The presence of high boiling point hydrocarbons in these wells has been persistent but at decreasing concentrations over past sampling periods. They have not been identified in downgradient wells suggesting that lateral migration is minimal. The phenolic compounds have been detected only during the most recent sampling event in July of 1990 and in one sampling event conducted in 1986. The concentrations of these constituents are only slightly above minimum detection limits and within the range of normal laboratory variation.

8.1.1.7 B(1)-Aquifer

At present, based upon the analyses of groundwater samples collected in July of 1990, the only target constituents present in the B(1)-aquifer are 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene at monitor well I-2 and phenol and monitor well I-3. No target constituents have been detected in groundwater samples collected from monitor well I-1 located at the eastern edge of the former drainage swale area during the last four sampling phases. The concentrations of halogenated volatile organic constituents and phenol in groundwater collected from monitor wells I-2 and I-3, directly downgradient from the former drainage swale area, are only slightly greater than the minimum detection limit.

8.1.2 Fate and Transport

8.1.2.1 Migration of Target Constituents

Four potential pathways for the migration of target constituents from the site have been identified: vadose zone soil, groundwater, man-made potential conduits and surface and air dispersal.

Migration of target constituents through vadose zone soil at the site has occurred in several areas due to downward migration of precipitation and surface runoff through vadose zone soil containing target constituents by gravity. The presence of root casts and sandy interbeds provide an effective pathway for the vertical migration of target constituents to the A-aquifer. Lateral migration of target constituents in the vadose zone soil has occurred within the continuous coarse sand interbed about 15 feet below grade and along other discontinuous sandy interbeds. In the former drainage swale area and in on-site areas, downward percolation of precipitation and runoff is prevented by the runoff collection system which directs runoff to the local sewer system thereby minimizing the effectiveness of target constituent migration through the vadose zone soil.

Downgradient migration of dissolved halogenated volatile organic constituents in a northerly direction has occurred within the A-aquifer. The stability of the concentrations of target constituents in downgradient monitor wells V-7, V-8 and V-9 suggest that the rate of migration is slow. Migration of target constituents from the drainage swale area appears to be limited to the more mobile chlorinated hydrocarbons such as 1,1,1-TCA, 1,1-DCA, 1,1-DCE and acetone. Less mobile target constituents such as alcohols and petroleum hydrocarbon mixtures have not been detected in monitor wells downgradient from the former drainage swale and underground storage tank areas.

Vertical migration of target constituents within aquifers may also have occurred as evidenced by the presence of target constituents in groundwater collected from monitor wells I-2 and I-3 which were completed in the B(1)-aquifer. The distribution of concentrations of target constituents in the B(1)-aquifer suggests that a single release through a man-made potential conduit may have occurred with a plume of three volatile organic constituents currently centered downgradient of the former drainage swale area. The permeability of the aquitard separating the A- and B(1)-aquifers is such that vertical migration is unlikely. The lateral continuity of this aquitard both on-site and at downgradient locations was established during the installation of the B(1)-aquifer wells. Lateral migration of target constituents within the B(1)-aquifer appears to be limited to the slow northerly downgradient migration of several halogenated volatile organic constituents now centered at monitor well I-2. The low permeability of the aquitard underlying the B(1)-aquifer makes vertical migration to underlying aquifers unlikely.

The construction of monitor well V-1 is such that it currently bridges both the A-aquifer and a significant portion of the aquitard separating the A- and B(1)-aquifers. This well provides a potential conduit for the migration of target constituents from the A-aquifer to the B(1)-aquifer although at present the differences in hydrostatic pressure within the two aquifers suggests that flow between the two aquifers would be upward from the A-aquifer to the B(1)-aquifer at this location. As all other wells and potential conduits in the vicinity of the site are properly sealed and/or located outside of the potential source zones and areas of target constituent migration, the migration of target constituents through the these conduits is unlikely.

Lateral and vertical migration of target constituents may have occurred in the past along surface pathways, particularly in the area of the former drainage swale; however at present such pathways have been eliminated or significantly decreased. Migration of target constituents along these pathways are unlikely. As most target constituents are present at depths of two feet or greater or are relatively immobile due to surface conditions or chemical characteristics, the migration of target constituents through air pathways is unlikely.

8.1.2.2 Target Constituent Persistence

The target constituents present at the site can be divided into three categories: halogenated volatile organic constituents, non-halogenated organic constituents and phenolic compounds. The volatile organic constituents identified at the site are generally highly volatile and moderately to highly soluble. These constituents would not be expected to be persistent in near surface soils although at depth and in groundwater they would be much more persistent due to their solubility in groundwater and vadose zone moisture and because they are not readily biodegradable by naturally occurring soil organisms. The phenolic compounds identified in soil and groundwater at the site tend to be of low to medium solubility and low volatility. These constituents would tend to be very persistent in subsurface soil and groundwater although there presence at the JASCO site is very limited and at very low concentrations. The shorter chain petroleum hydrocarbons which generally include thinners and gasoline tend to be moderately to highly volatile with low solubility and are readily biodegradable by naturally occurring soil organisms under aerobic conditions. For these reasons, such constituents would not be highly persistent in at shallow depths in soil but more persistent in groundwater as they have a tendency to remain as free product floating on the groundwater surface. The longer chain petroleum hydrocarbons (predominantly diesel fuels) on the other hand, are less volatile and not readily biodegradable and tend to be very persistent in subsurface soil and groundwater.

8.1.3 POTENTIAL CONDUITS

A potential conduits investigation was prepared for the site in May of 1988. The report identified a number of subsurface structures in the vicinity of the JASCO site and presented data concerning the potential for these structures to provide conduits for the migration of target constituents. These included water supply wells in the vicinity of the site, monitor wells installed during the investigation of JASCO, underground utilities and the Hetch-Hetchy Aqueduct. Based on the results of this study, the structures identifed were unlikely to provide potential conduits for movement of target constituents. Water producing wells in the vicinity of the site have either been destroyed are are located cross gradient from the site. Monitor wells at the site have been constructed according to Santa Clara Valley Water District guidelines. Underground utilities and the Hetch-Hetchy Aquiduct near the site are shallow and do not intersect the A-aquifer. A copy of this investigation is included in Appendix H.

Several additional structures have been identified which were not investigated or were constructed after the submittal of this report. Monitor wells V-11 and V-12 were constructed upgradient from the area from which target constituents were detected in groundwater, were inspected by SCVWD at the time of construction and therefore are unlikely to be potential conduits. Monitor well (V-1) has been identified as a potential conduit for the movement of target constituents within the aquitard separating the A- and B(1)-aquifers. The screened portion of this well extends across both the A-aquifer and a significant portion of the aquitard separating the A- and B(1)-aquifers and water levels appear to be consistent with flow pattern in the

B(1)-aquifer. The potential for migration of target constituents to the B(1)-aquifer, however, is limited as the difference in hydrostatic pressure within the two aquifer suggest that flow between the two aquifers would by upward.

8.1.4 RISK ASSESSMENT

An Endangerment Assessment for JASCO site was prepared by Jacobs Engineering Group Inc., an EPA consultant, in August of 1989. A copy of this Endangerment Assessment is included in Appendix I.

Results of this assessment indicated that there were significant carcinogenic risks associated with the consumption and inhalation of vapors from the groundwater of the A-aquifer. The results of this assessment also indicated that there were significant non-carcinogenic risks associated with the consumption of groundwater from the A-aquifer. The calculations used in making these determinations, however, were based in part upon the highest historic concentration of target constituents which are in most cases significantly higher than the current maximum concentrations of indicator constituents detected in A-aquifer groundwater.

The results of this Endangerment Assessment indicated that there is no significant carcinogenic or non-carcinogenic risk associated with exposure to on-site soils via incidental ingestion or fugitive dust inhalation.

8.2 CONCLUSIONS

8.2.1 Data Limitations and Recommendations for Further Work

A sufficient amount of data has been collected to establish the presence and distribution of target constituents in areas surrounding the potential source areas identified in the Remedial Investigation. Facility constraints due to the present operation of JASCO and the presence of buildings, underground storage tanks and impermeable surfacing does not allow the assessment of soil quality in areas directly below the current production and operating facilities. At the time the facility is decommissioned a soil quality investigation is recommended beneath these areas.

The current operation of the SP rail lines and the presence of ballast and railroad tracks prevents the assessment of soil quality directly beneath the ballast. Soil and groundwater quality information has been collected at locations directly to the north of rail lines, therefore no additional work in this area is recommended at this time.

A sufficient number of monitor wells have been installed at the site and an adequate quantity of data has been collected to establish the presence and migration of target constituents within the A- and B(1)-aquifers. No groundwater quality data has been collected from the B(2)-aquifer at the site, however the migration of target constituents through the overlying aquitard is unlikely, therefore no additional groundwater monitor wells are recommended at this time.

8.2.2 Recommended Remedial Action Objectives

Based upon the results of this Remedial Investigation, the objectives of the subsequent remedial activities are to remediate the known areas where target constituents are present in subsurface soil (drainage swale area, former diesel fuel storage tank area), to eliminate the migration of target constituents through the A-and B(1)-aquifers through groundwater remediation or other suitable containment alternatives, to eliminate to the extent possible pathways for the further migration of target constituents from the site, and to develop methods for the evaluation and remediation of areas of the site for which additional study will be required upon the decommission of the facility.

Initially, one of the objectives of soil remedial activities at the JASCO site is to establish acceptable cleanup levels that are both protective of human health and safety and environmental quality and are feasible considering the available remedial technologies. As such cleanup levels have not been established it is not possible to determine precisely the volume and boundaries of areas warranting remediation. The results of this investigation, however, have identified the following areas as containing target constituents at concentrations that may warrant the development of remedial alternatives.

In the eastern portion of the former drainage swale area, the soil contained in the area bounded to the north and south by the railroad ballast and the concrete pad respectively, to the west by borehole SB-5 and extending to the east at least as far as borehole S-1 contains elevated concentrations of target constituents from the surface to the depth of the A-aquifer (about 30 feet). To the west of this area, the area bounded to the north and south by the railroad ballast and block wall respectively and extending to the west from borehole SB-5 approximately 160 feet contained elevated concentrations of target constituents from the surface to a depth of five feet. The area of interim soil excavation should be excluded from remedial activities as this area had been part of an earlier remedial phase. Elevated concentrations of target constituents were also identified in the fill within the excavation of the former diesel storage tanks although the extent of these constituents does not appear to extend beyond the limits of the excavation.

Recommended remedial action objectives concerning groundwater in the vicinity of the JASCO site relate to the containment of migration, the remediation of groundwater, and the elimination of potential conduits bridging the various water-bearing zones. Results of this remedial investigation indicated that the groundwater of the A-aquifer in the vicinity of the eastern portion of the former drainage swale area and the underground storage tank contains detectable concentrations of several target constituents. Remediation of portions of the former drainage swale area soil will likely result in a decrease in the migration of target constituents to A-aquifer groundwater however measures may be warranted to remediate the present portion of affected groundwater and to contain the downgradient migration of target constituents. In addition, although the hydraulic conditions of the two aquifers and the distribution of target constituents in B(1)-aquifer groundwater do not suggest that migration of A-aquifer groundwater to the underlying aquifer has occurred, the potential for such an occurrence may warrant the abandonment of monitor well V-1 which bridges the A-aquifer and a significant portion of the aquitard separating the A- and B(1)-aquifers.

TABLES

TABLE 3.1
PRECIPITATION DATA FOR LOS ALTOS FIRE DEPARTMENT STATION (1965 TO 1982)

Location: Los Altos Fire Dept. (Station No. 47)
Elevation: 48 meters

Latitude: 37/23/5
Longitude: 122/06/45

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Season Total
1965–66	0.0	7.1	0.0	0.0	126.8	98.3	25.7	30.2	9.7	10.2	2.0	1.6	311.6
1966–67	10.4	1.5	2.0	0.0	85.3	71.1	192.0	7.4	105.9	116.3	5.8	10.3	608.0
1967–68	0.0	0.0	0.0	5.3	26.9	52.6	122.7	19.1	80.3	8.6	1.0	0.0	316.5
1968–69	0.0	0.0	0.0	15.8	43.4	91.4	207.5	187.2	29.0	35.8	0.0	0.0	610.1
1969–70	0.0	0.0	0.5	17.8	14.2	58.2	169.7	32.8	40.1	1.5	0.0	0.0	334.8
1970–71	0.0	0.0	0.0	8.6	172.5	115.6	21.8	6.6	36.1	19.6	2.3	0.0	383.1
1971–72	0.0	0.0	9.1	0.0	41.4	119.6	32.8	16.3	0.8	12.7	0.0	1.5	234.2
1972–73	0.0	0.0	11.2	86.1	146.6	36.6	164.1	189.2	53.6	1.0	0.0	0.0	688.4
1973–74	0.0	0.0	0.0	46.2	138.7	57.2	24.6	19.6	37.9	19.6	4.1	5.3	353.2
1974–75	0.0	0.0	0.0	32.8	-------	-------	12.2	113.8	146.6	25.4	0.0	1.0	-----
1975–76	3.8	11.9	0.0	34.5	5.8	2.3	3.6	46.0	26.2	18.0	0.0	0.0	152.1
1976–77	0.8	20.8	18.8	9.1	22.4	20.1	42.9	13.2	45.0	5.1	42.2	0.0	240.4
1977–78	3.6	0.0	21.1	7.6	26.2	96.0	225.0	109.5	100.3	64.5	0.0	0.0	653.8
1978–79	0.0	0.0	0.0	0.0	34.8	9.7	127.5	92.5	78.7	6.9	2.5	0.0	352.6
1979–80	5.1	0.0	0.0	22.6	39.1	75.7	90.4	170.4	50.8	22.1	0.0	0.0	476.2
1980–81	1.0	0.0	0.0	0.0	3.3	37.9	119.4	45.2	76.2	3.8	3.1	0.0	289.9
1981–82	0.0	0.0	2.3	12.2	118.9	57.4	133.1	70.9	147.6	67.1	0.0	12.2	621.7
Average Rainfall	1.5	2.4	3.8	17.6	65.4	62.5	100.9	68.8	62.6	25.8	3.7	1.9	414.2
Standard Deviation	2.7	5.6	6.7	21.7	54.8	34.7	72.6	62	41.8	29.5	9.7	3.4	165.3

All measurements in millimeters (1 inch = 25.4 mm)
(From Santa Clara Valley Water District, 1984)

TABLE 3.2
PRECIPITATION DATA FOR MOUNTAIN VIEW CORPORATION YARD (1974 TO 1982)

Location: Mountain View Corporation Yard (Station No. 121) Latitude: 37/24/17
Elevation: 17 meters Longitude: 122/03/14

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Season Total
1974–75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9	104.1	27.9	10.2	0.0	170.1
1975–76	2.5	15.2	0.0	22.9	2.5	2.5	5.1	33.0	27.9	12.7	0.0	2.5	126.8
1976–77	0.0	17.8	12.7	10.2	17.8	15.2	43.2	20.3	48.3	0.0	38.1	0.0	223.6
1977–78	5.1	0.0	12.7	2.5	17.8	73.7	177.8	78.7	71.1	66.0	0.0	0.0	505.4
1978–79	0.0	0.0	0.0	0.0	30.5	7.6	101.6	78.7	63.5	12.7	0.0	0.0	294.6
1979–80	2.5	0.0	0.0	40.6	27.9	76.2	66.0	157.5	38.1	22.9	0.0	0.0	431.7
1980–81	10.2	0.0	0.0	0.0	2.5	45.7	83.8	33.0	53.3	7.6	7.6	0.0	243.7
1981–82	0.0	0.0	2.5	58.4	91.4	40.6	137.2	45.7	134.6	40.6	0.0	15.2	566.2
Average Rainfall	2.5	4.1	3.5	16.8	23.8	32.7	76.8	59.4	67.6	23.8	7.0	2.2	320.4
Standard Deviation	3.4	4.1	5.4	20.7	27.6	29.8	57.9	42.5	33.3	19.9	12.4	5.0	165.3

All measurements in millimeters (1 inch = 25.4 mm)
(From Santa Clara Valley Water District, 1984)

TABLE 3.3
SURFACE WIND SUMMARY – MOFFETT AIR STATION (1962 TO 1977)

North Latitude: 37 deg, 25 min
West Longitude: 122 deg, 3 min
Elevation: 13 feet

Directio	Winter		Spring		Summer		Fall		Annual	
	% of time	mean speed	% of time	mean speed	% of time	mean speed	% of time	mean speed	% of time	mean speed
N	9.1	6.5	13.0	8.1	21.1	8.4	12.6	7.0	14.0	7.7
NNE	2.8	6.8	3.5	6.4	5.7	5.6	2.5	5.1	3.6	5.9
NE	1.4	5.6	1.3	4.6	2.2	4.2	0.9	4.0	1.5	4.6
ENE	0.6	4.1	0.7	3.5	1.2	3.5	0.6	3.4	0.8	3.6
E	1.4	4.8	1.2	4.8	1.5	3.5	1.2	3.8	1.3	3.8
ESE	2.4	6.7	1.8	5.5	1.3	4.3	1.9	5.9	1.9	5.8
SE	7.3	8.8	4.6	6.3	2.5	4.4	4.4	6.9	4.7	7.2
SSE	7.3	8.2	5.0	5.7	2.6	4.2	4.6	6.7	4.8	6.7
S	5.2	6.9	4.5	4.9	2.1	3.2	4.0	5.1	3.9	5.4
ESW	1.3	5.1	1.3	5.1	0.4	3.2	0.9	4.2	1.0	4.7
SW	1.5	4.3	1.2	5.1	0.4	3.8	0.8	3.8	1.0	4.4
WSW	1.6	5.4	1.8	6.4	0.7	9.7	0.9	4.2	1.2	5.5
W	6.9	4.5	8.8	6.3	4.0	5.4	4.6	4.3	6.1	5.3
WNW	5.8	5.5	8.2	7.2	4.5	5.4	5.3	5.1	5.9	5.9
NW	5.5	5.9	7.6	7.9	6.7	7.4	6.4	6.6	6.5	7.0
NNW	8.6	6.5	15.1	9.3	23.8	9.8	14.9	8.0	15.7	8.8
CALM	31.2		20.3		19.3		33.4		26.1	
ALL		4.4		5.7		6.0		4.2		5.1
		mph		mph		mph		mph		mph

	Winter	Spring	Summer	Fall	Annual
Resultant Wind					
Direction	311	325	344	338	337
Speed	0.2	2.9	4.6	1.9	2.4
Percent Ratio	0.05	0.51	0.87	0.44	0.47
Predominant Wind					
Direction	NNW	NNW	NNW	NNW	NNW
Speed	6.4	8.6	8.9	7.4	8.1
Percentage	23.8	35.7	51.6	33.9	36.2
Secondary Predominant Wind					
Direction	SSE	W	W	SSE	SSE
Speed	8.1	6.8	5.4	6.3	6.5
Percentage	15.8	18	9.2	13	13.4

From California Air Resources Board

TABLE 3.4
HISTORIC GROUNDWATER LEVELS
JASCO CHEMICAL CORPORATION
AUGUST 1987 TO AUGUST 1990

Date	A-Aquifer												B(1)-Aquifer		
	V-1	V-2	V-3	V-4	V-5	V-6	V-7	V-8	V-9	V-10	V-11	V-12	I-1	I-2	I-3
8/17/87	34.80	34.32	34.74	34.32	34.35	34.15	33.71	–	–	–	–	–	34.25	33.81	33.74
8/23/87	34.70	34.16	34.71	33.97	34.16	34.10	33.61	–	–	–	–	–	34.11	33.77	33.64
8/29/87	34.62	34.15	34.66	34.14	34.19	34.00	33.57	–	–	–	–	–	34.07	33.66	33.59
9/7/87	34.58	34.11	34.50	34.07	34.14	33.95	33.54	–	–	–	–	–	34.02	33.60	33.52
3/6/88	34.29	(*)	34.11	25.54	33.86	33.72	33.20	33.33	33.14	34.38	–	–	33.78	33.37	33.31
3/22/88	34.15	(*)	33.87	24.86	33.64	32.92	32.99	33.20	33.04	34.30	–	–	33.42	33.22	33.17
12/19/88	31.38	(*)	31.01	26.38	–	30.94	30.43	30.58	30.40	31.47	–	–	30.91	30.59	30.54
1/19/89	31.31	(*)	30.99	26.56	31.08	30.82	30.37	30.47	30.31	31.40	–	–	30.83	30.48	30.47
2/14/89	31.02	(*)	30.61	25.52	30.82	30.56	30.08	30.25	30.07	31.09	–	–	30.53	30.22	30.16
8/11/89	29.6	(*)	28.0	(**)	29.6	29.2	28.7	29.1	28.6	29.8	–	–	32.0	29.0	30.6
10/25/89	29.16	(*)	28.87	29.21	28.99	28.65	28.24	28.36	28.21	29.19	–	–	28.68	28.37	28.33
11/30/89	29.00	(*)	28.90	28.70	28.76	28.55	28.15	28.18	28.04	29.13	–	–	28.56	28.19	28.15
12/29/89	28.98	(*)	28.85	28.12	28.71	28.51	28.10	28.11	27.98	29.11	–	–	28.56	28.12	28.11
1/30/90	29.03	(*)	28.58	28.50	28.94	28.69	28.31	28.44	28.26	29.13	–	–	28.62	28.42	28.39
2/28/90	29.13	(*)	28.74	28.39	29.10	28.72	28.27	28.44	28.18	29.33	–	–	28.72	28.42	28.40
3/23/90	29.21	(*)	28.92	28.72	29.02	28.78	28.30	28.47	28.30	29.37	–	–	28.86	28.44	28.42
4/25/90	29.07	(*)	28.66	28.74	28.93	28.62	28.27	28.38	28.22	29.19	–	–	28.69	28.4	28.38
5/25/90	29.15	(*)	28.86	28.73	28.97	28.74	28.28	28.43	28.26	29.32	–	–	28.8	28.44	28.4
6/27/90	29.12	(*)	28.76	28.75	28.99	28.73	28.28	28.41	28.24	29.32	29.60	29.44	28.74	28.42	28.38
7/24-27/90	28.66	(*)	28.50	27.96	28.53	28.21	27.83	28.01	27.85	28.74	–	–	28.20	27.95	27.91
8/14/90	28.51	(*)	28.38	(**)	28.38	28.05	27.70	27.83	27.67	28.67	–	–	28.09	27.82	27.82

(*) – Monitor well destroyed
(**) – Data not available, groundwater extraction in operation

TABLE 4.1
SUMMARY OF RESULTS OF ANALYSES OF NEAR SURFACE SOIL SAMPLES
FORMER DRAINAGE SWALE AREA
JASCO CHEMICAL CORPORATION
JUNE, 1990

SAMPLES COLLECTED FROM THE DEPTH OF 0 TO 0.25 FEET

Constituent	S-1	S-2	S-3	S-4	S-5	S-6
Volatile Organics (EPA methods 601/624)						
	No concentrations exeeding detection limits.					
Non-Halogenated Volatile Organics (EPA method 8015)						
High BP HC(*)	50	<1.0	1.4	28	15	<1.0
Low-Med BP HC(**)	<1.0	<1.0	<1.0	<1.0	1.4	<1.0
Purgeable Aromatics (EPA method 8020)						
Benzene	<0.005	0.0079	<0.005	<0.005	<0.005	<0.005
Benzene (Duplicate)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene (Duplicate)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	<0.005	0.0055	0.017	<0.005	<0.005	0.0061
Toluene (Duplicate)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene (Duplicate)	0.006	0.013	0.0061	0.016	<0.005	0.0068
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)

SAMPLES COLLECTED FROM THE DEPTH OF 1 TO 1.5 FEET

Constituent	S-1	S-2	S-3	S-4	S-5	S-6
Volatile Organics (EPA methods 601/624)						
Tetrachloroethene	<0.005	<0.005	<0.005	<0.005	0.0054	<0.005
Non-Halogenated Volatile Organics (EPA method 8015)						
Methanol	12	<1.0	44	<1.0	<1.0	25
High Boiling Pt. HC	290	<1.0	4.1	48	9.4	<1.0
Low-Med Boiling Pt. HC	730	<1.0	<1.0	<1.0	<1.0	<1.0
Purgeable Aromatics (EPA method 8020)						
Benzene	0.12	<0.005	<0.005	<0.005	<0.005	<0.005
Benzene (Duplicate)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	0.37	<0.005	<0.005	0.032	<0.005	0.052
Ethylbenzene (Duplicate)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	0.13	<0.005	0.032	0.081	0.13	0.038
Toluene (Duplicate)	<0.005	<0.005	0.019	0.027	<0.005	0.018
Xylene	0.66	<0.005	0.0057	0.16	<0.005	0.15
Xylene (Duplicate)	<0.005	<0.005	<0.005	0.015	<0.005	0.0054
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)

TABLE 4.2
SUMMARY OF ANALYTICAL RESULTS (ppm) OF SOIL SAMPLES
COLLECTED FROM THE DEPTH OF 3 FEET AT SAMPLE POINTS SB-1 TO SB-15
FORMER DRAINAGE SWALE AREA
MAY, 1988

Constituent	SB-1	SB-2	SB-3 (*)	SB-4 (*)	SB-5	SB-6 (*)	SB-7	SB-8	SB-9	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15
Volatile Organics (EPA methods 8010/8240)															
1,1-DCA	0.54	1.4	<0.5	1.2	<0.1	<0.1	0.16	<0.1	0.61	0.36	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-TCA	1.1	2.6	47	7.3	<0.1	<0.1	0.44	<0.1	0.14	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Acetone	<0.5	6.3	25	15	<0.5	29	<1.0	<0.5	35	86	<0.5	9.2	0.75	<0.5	<0.5
Ethylbenzene	<0.1	<0.1	<0.1	2.2	<0.1	0.98	<0.1	<0.1	1.2	0.5	<0.1	0.32	0.2	<0.1	<0.1
Methylene Chloride	1.3	1.7	210	64	<0.5	<0.5	<0.5	<0.5	6.2	6.0	<0.5	0.68	<0.5	<0.5	<0.5
Tetrachloroethylene	<0.1	<0.1	<0.1	1.0	<0.1	<0.1	0.210	<0.1	0.24	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
TCE	<0.1	<0.1	<0.1	0.56	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	<0.1	0.3	38	17	<0.1	1.6	0.62	<0.1	8.2	3.3	<0.1	1.6	1.2	<0.1	<0.1
Xylene	<0.1	<0.1	27	210	<0.1	0.7	0.31	<0.1	11	4.6	<0.1	2.8	1.9	<0.1	<0.1
Non-Halogenated Volatile Organics (EPA method 8015)															
Acetone	1.1	8.8	91	28	<0.5	17	<0.5	1.2	49	100	<0.5	14	1.2	<0.5	<0.5
Ethanol	0.7	<0.1	20	<0.1	<0.5	<0.5	<0.1	0.6	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropanol	<0.5	<0.1	18	60	<0.5	<0.5	<1.0	0.8	164	21	<0.5	11	<0.5	<0.5	<0.5
Methanol	3.3	5.0	32	14	1.3	1.5	<1.0	1.2	5.8	9.0	<0.5	2.4	1.1	0.9	0.9
Methyl ethyl ketone	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<0.2	<0.5	1.3	1.9	<0.5	1.8	<0.5	<0.5	<0.5
TPH as diesel	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.1	6.1	<1.0	11	<1.0	<1.0	<1.0
TPH as kerosene	<1.0	10	150	140	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TPH as paint thinner	<1.0	5.2	320	320	<1.0	170	2.1	<1.0	4.0	7.3	<1.0	2.1	<1.0	<1.0	<1.0
Miscellaneous Hydrocarbons (primarily non-priority straight chain and cyclic aromatic hydrocarbons).															
Total	<0.2	1.4	<0.2	49.4	<0.2	0.85	<0.2	<0.2	3.8	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2

(*) – Sample point lies within area of interim soil excavation.
Affected soil has been removed and disposed.

TABLE 4.3
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
FORMER DRAINAGE SWALE AREA
BOREHOLES B-1 AND B-2
JASCO CHEMICAL CORPORATION
JULY, 1990

BOREHOLE B-1

Constituent	3'	5'	10'	15'	20'	25'	30'
Volatile Organics (EPA methods 8010/8240)							
1,1-DCA	0.12	0.38	0.038	<0.05	0.72	2.2	3
1,1-DCE	0.39	1.7	0.025	0.17	0.24	0.15	<0.05
1,1,1-TCA	15	61	0.59	5.3	6.8	<0.05	<0.05
Bromoform	<0.05	<0.05	<0.025	<0.05	<0.05	0.17	0.11
Methylene Chloride	0.9	<0.1	0.75	<0.1	4.2	3.2	<0.1
Tetrachloroethene	<0.05	0.065	<0.025	0.052	<0.05	4	<0.05
Trichloroethene	<0.05	0.05	<0.025	<0.05	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)							
Isopropanol	76	<15	<30	<0.5	<0.5	<30	<0.5
Methanol	60	<30	<60	<1.0	<1.0	<60	<1.0
Low-Med Boiling Pt. HC	2,600	6,700	170	1,300	120	380	38
Purgeable Aromatics (EPA method 8020)							
Toluene	37	110	1.1	3.4	4.1	6.3	1.4
Xylene	11	37	0.87	5.5	2.6	5.9	1.5
Ethylbenzene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.37
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-2

Constituent	3'	5'	10'	15'	20'	25'	25'
Volatile Organics (EPA methods 8010/8240)							
1,1-DCA	0.02	0.016	0.036	0.11	0.063	0.41	<0.005
1,1-DCE	<0.005	<0.005	<0.005	0.03	<0.005	0.036	<0.005
1,2-DCE	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	<0.005
1,1,1-TCA	0.099	0.052	0.016	0.095	0.052	0.016	<0.005
Bromoform	<0.005	<0.005	<0.005	<0.005	<0.005	0.019	<0.005
Methylene Chloride	<0.01	<0.01	0.14	0.27	0.71	<0.01	<0.01
Trichloroethene	0.015	<0.005	<0.005	0.0073	<0.005	<0.005	<0.005
Non-Halogenated Volatile Organics (EPA method 8015)							
Low-Med Boiling Pt. HC	<1.0	<1.0	<1.0	2,800	1,300	2,600	<1.0
Purgeable Aromatics (EPA method 8020)							
Toluene	0.023	<0.005	<0.005	0.005	<0.005	0.085	0.018
Xylene	<0.005	<0.005	<0.005	0.01	<0.005	0.038	0.026
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

TABLE 4.3 (cont.)
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
FORMER DRAINAGE SWALE AREA
BOREHOLES B-3 AND B-4
JASCO CHEMICAL CORPORATION
JULY, 1990

BOREHOLE B-3

Constituent	3'	5'	10'	15'	20'	25'	30'
Volatile Organics (EPA methods 8010/8240)							
1,1,1-TCA	0.014	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Non-Halogenated Volatile Organics (EPA method 8015)							
	No concentrations exceeding detection limit.						
Purgeable Aromatics (EPA method 8020)							
Toluene	0.018	<0.005	<0.005	<0.005	<0.005	0.008	<0.005
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-4

Constituent	5'	10'	15'	20'	20' dup	25'	30'
Volatile Organics (EPA methods 8010/8240)							
	No concentrations exceeding detection limit.						
Non-Halogenated Volatile Organics (EPA method 8015)							
	No concentrations exceeding detection limit.						
Purgeable Aromatics (EPA method 8020)							
	No concentrations exceeding detection limit.						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

TABLE 4.4
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SAMPLES
FORMER DRAINAGE SWALE AREA
JASCO CHEMICAL CORPORATION
JUNE 1987 TO APRIL 1988

BOREHOLE B-8

Constituent	3'	5'	10'	15'	20'
Volatile Organics (EPA methods 8010/8240)					
1,1-DCA	27	34	0.98	0.2	0.76
1,1-DCE	13	<0.05	<0.05	<0.05	<0.05
1,1,1-TCA	<0.05	1.5	22	2.3	0.21
1,2-DCA	3.9	<0.05	<0.05	<0.05	<0.05
Carbon Tetrachloride	680	<0.05	<0.05	<0.05	<0.05
Chloroform	2.3	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	170	na	na	na	na
Methylene Chloride	3400	2.4	71	8.9	18
Tetrachloroethane	16	0.0067	0.31	<0.05	<0.05
TCE	490	<0.05	0.85	0.088	<0.05
Toluene	1700	na	na	na	na
Non-Halogenated Volatile Organics (EPA method 8015)					
Acetone	270	na	15	na	13
Isopropanol	3.5	na	1	na	2.5
TPH as paint thinner	11000	na	2600	na	20
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

na - not analyzed

Also detected in samples from B-9 at depths between 4 and 11 feet but not in any of the other sample points:

Octahydro-1H-indene	Ethylcyclopentane
1,3-Dimethylcyclopentane	Methylcyclohexane
1-Ethyl-2-Methylcyclohexane	Propylcyclohexane
1-Methyl-3-Cyclopentane	2,5,6-Trimethyldecane
1,2,4-Trimethylcyclohexane	2-Methylhexane

Note: Borehole B-9 was located within an area that was part of an interim remedial measure. The affected soil has been excavated and disposed.

TABLE 4.4 (cont.)
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SAMPLES
FORMER DRAINAGE SWALE AREA
JASCO CHEMICAL CORPORATION
JUNE 1987 TO APRIL 1988

BOREHOLE B-9

Constituent	2'	4'	6'	11'	16'	21'
Volatile Organics (EPA methods 8010/8240)						
1,1-DCA	<0.05	2.2	0.68	0.23	<0.05	<0.05
1,1-DCE	0.16	<0.05	<0.05	<0.05	<0.05	<0.05
1,1,1-TCA	0.34	30	28	0.29	<0.05	<0.05
2-propanone	24	25	6.2	5.1	<0.05	<0.05
Bromodichloromethane	0.16	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	<0.1	3	4.2	<0.1	<0.1	<0.1
Methylene Chloride	9.3	42	21	7.4	16	15
Tetrachloroethane	<0.05	0.87	1.3	<0.05	<0.05	<0.05
TCE	<0.05	1.4	1.5	<0.05	<0.05	<0.05
Toluene	2.3	38	41	0.27	<0.05	<0.05
Xylene	0.45	18	27	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)						
Acetone	16	25	1.8	27	12	4
Isopropanol	<1.0	1.5	<1.0	<1.0	<1.0	<1.0
TPH as lacquer thinner	16	<1.0	<1.0	<1.0	<1.0	<1.0
TPH as paint thinner	96	5000	2000	29	<1.0	<1.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

Note: Borehole B-9 was located within an area that was part of an interim remedial measure. The affected soil has been excavated and disposed.

TABLE 4.4 (cont.)
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SAMPLES
FORMER DRAINAGE SWALE AREA
JASCO CHEMICAL CORPORATION
JUNE 1987 TO APRIL 1988

BOREHOLE B-10

Constituent	2'	3'	6'	11'	15'	21'
Volatile Organics (EPA methods 8010/8240)						
2-propanone	<0.05	1.7	2.3	2.4	<0.05	2.6
Ethylbenzene	0.22	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	0.74	<0.05	<0.05	<0.05	<0.05	<0.05
Xylene	2.1	<0.05	<0.05	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)						
TPH as lacquer thinner	11	<1.0	<1.0	<1.0	<1.0	<1.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-11

Constituent	2'	4'	6'	11'	16'	21'
Volatile Organics (EPA methods 8010/8240)						
2-propanone	3.1	1.2	<0.05	0.55	5.4	0.9
Xylene	0.27	<0.05	<0.05	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)						
Acetone	2.8	<1.0	<1.0	<1.0	<1.0	<1.0
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-12

Constituent	2'	4'	6'
Volatile Organics (EPA methods 8010/8240)			
Xylene	<0.05	0.76	0.17
Non-Halogenated Volatile Organics (EPA method 8015)			
TPH as diesel	3.2	13	14
	mg/kg	mg/kg	mg/kg

TABLE 4.5
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
UNDERGROUND STORAGE TANK AREA
JASCO CHEMICAL CORPORATION
JUNE, 1987 AND JULY, 1990

BOREHOLE B-5A (completed July 1990)

Constituent	3'	5'	10'	15'	20'	25'	30'
Volatile Organics (EPA method 8010)							
1,2-DCE	<0.005	<0.005	<0.005	<0.005	0.010	<0.005	<0.005
Non-Halogenated Volatile Organics (EPA method 8015)							
	No concentrations exceeding detection limit.						
Purgeable Aromatics (EPA method 8020)							
Toluene	<0.005	<0.005	<0.005	<0.005	0.010	<0.005	0.010
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	

BOREHOLE B-5 (completed June 1987)

Constituent	1'	5'	10'	15'	20'
Volatile Organics (EPA method 8010)					
Methylene Chloride	<0.05	0.77	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)					
	No concentrations exceeding detection limit.				
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-6 (completed June 1987)

Constituent	1'	5'	10'	15'	20'
Volatile Organics (EPA method 8010)					
Methylene Chloride	2.1	0.99	<0.05	0.72	1.6
Non-Halogenated Volatile Organics (EPA method 8015)					
	No concentrations exceeding detection limit.				
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

MONITOR WELL V-3 (completed November 1986)

Constituent	5' & 10'		13' & 19'		36'
Volatile Organics (EPA method 8010)					
	No concentrations exceeding detection limit.				
Non-Halogenated Volatile Organics (EPA method 8015)					
Acetone	1.9		<1.0		1.8
Isopropanol	2.5		1.2		2.4
Methanol	5.8		4.4		3.0
	mg/kg		mg/kg		mg/kg

TABLE 4.6
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
FORMER DIESEL STORAGE TANK AREA
JASCO CHEMICAL CORPORATION
JUNE, 1987 AND OCT, 1987

BOREHOLE B-7 (completed June, 1987)

Constituent	1'	3'	5'	10'	15'	20'
Volatile Organics (EPA method 8010)						
Methylene Chloride	0.25	<0.05	<0.05	<0.05	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)						
	No concentrations exceeding detection limit.					
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

Note: Samples from this borehole were analyzed for TPH as paint thinner and alcohols but not for TPH as diesel fuel.

EXCAVATION SAMPLES (collected October, 1987)

Constituent	WA-1 Excavation Wall	WA-2 Excavation Floor
Volatile Organics (EPA method 8010)		
	No analyses conducted.	
Non-Halogenated Volatile Organics (EPA method 8015)		
TPH as diesel	360	59
Purgeable Aromatics (EPA method 8020)		
Benzene	3.0	0.39
Toluene	0.55	0.77
Xylene	9.6	7.8
	mg/kg	mg/kg

TABLE 4.7
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
DRUM STORAGE AREA
JASCO CHEMICAL CORPORATION
JUNE, 1987 AND JULY, 1990

BOREHOLE S-7 (completed June 1990)

Constituent	3'	6'	
Volatile Organics (EPA method 8010)			
	No concentrations exceeding detection limit.		
Non-Halogenated Volatile Organics (EPA method 8015)			
	No concentrations exceeding detection limit.		
Purgeable Aromatics (EPA method 8020)			
Benzene	<0.005	0.0059	
Toluene	0.0084	0.0074	
Ethylbenzene	<0.005	0.0056	
Xylene	0.011	0.012	
	mg/kg	mg/kg	

MONITOR WELL V-12 (completed June, 1990)

Constituent	15'	20'	25'
Volatile Organics (EPA method 8010)			
	No concentrations exceeding detection limit.		
Non-Halogenated Volatile Organics (EPA method 8015)			
	No concentrations exceeding detection limit.		
Purgeable Aromatics (EPA method 8020)			
	No concentrations exceeding detection limit.		
	mg/kg	mg/kg	mg/kg

BOREHOLE B-2 (completed June 1987)

Constituent	1'	3'	10'	20'
Volatile Organics (EPA method 8010)				
1,1,1-TCA	<0.05	<0.05	<0.05	0.11
Methylene Chloride	1.1	<0.05	<0.05	1.0
Non-Halogenated Volatile Organics (EPA method 8015)				
	No concentrations exceeding detection limit.			
	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-3 (completed June 1987)

Constituent	1'	10'	20'
Volatile Organics (EPA method 8010)			
1,1,1-TCA	0.56	<0.05	0.15
Methylene Chloride	2.4	<0.05	0.35
Non-Halogenated Volatile Organics (EPA method 8015)			
	No concentrations exceeding detection limit.		
	mg/kg	mg/kg	mg/kg

TABLE 4.8
SUMMARY OF RESULTS OF ANALYSES OF SUBSURFACE SOIL SAMPLES
BACKGROUND LOCATIONS
JASCO CHEMICAL CORPORATION
JUNE, 1987 AND JULY, 1990

MONITOR WELL V-11 (completed June, 1990)

Constituent	2'	5'	10'	15'	20'	25'	30'
Volatile Organics (EPA method 8010)							
	No concentrations exceeding detection limit.						
Non-Halogenated Volatile Organics (EPA method 8015)							
High Boiling Pt. HC	2.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Purgeable Aromatics (EPA method 8020)							
	No concentrations exceeding detection limit.						
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg

BOREHOLE B-1 (completed June 1987)

Constituent	3'	20'
Volatile Organics (EPA method 8010)		
1,1,1-TCA	0.28	0.41
Methylene Chloride	<0.05	<0.05
Non-Halogenated Volatile Organics (EPA method 8015)		
	No concentrations exceeding detection limit.	
	mg/kg	mg/kg

TABLE 4.9
SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER - MONITOR WELL V-1 (mg/l)

Constituent	July 1984	Nov 1987	Aug 1987	Sept 1987	Jan 1989	Sept 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)										
1,1,1-Trichloroethane	0.009	na	<0.0005	<0.0005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	na	na	<0.0005	0.0039	<0.002	0.0037	0.0032	0.0052	0.0082	0.0056
1,1-Dichloroethene	na	na	<0.0005	0.0058	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	na	0.018	<0.0005	<0.0005	<0.002	0.014	<0.002	<0.002	0.0068	0.017
Trans-1,2-Dichloroethene	na	na	na	0.0014	na	<0.002	<0.002	<0.002	<0.002	<0.002
Non-Halogenated Volatile Organics (EPA method 8015)										
Acetone	0.098	na	<1	<0.05	na	<0.015	<0.015	0.038	<0.015	<0.015
Ethanol	<0.02	na	<1	<0.05	na	0.16	<0.05	<0.05	<0.05	<0.05
Methanol	0.095	na	<1	<0.05	na	0.2	<0.06	<0.06	<0.06	<0.06
Methyl ethyl ketone	0.004	na	<0.0005	<0.0005	na	na	na	na	na	na
TPH as diesel	na	na	na	na	0.15	0.2	0.3	1.1	0.97	0.61
TPH as paint thinner	0.86	na	<1	<1	na	na	na	na	na	na
Phenols (EPA method 604)										
4-Nitrophenol	na	na	<0.001	<0.01	na	<0.02	<0.04	<0.02	0.037	<0.020
Pentachlorophenol	0.0002	na	<0.001	<0.01	na	<0.02	<0.04	<0.02	0.023	<0.020

na – Analyses not conducted.

TABLE 4.10

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER - MONITOR WELL V-2 (mg/l)

Constituent	Nov 1987	Aug 1987	Aug 1987	Sept 1987	Sept 1987
Volatile Organics (EPA methods 601/624)					
1,1,1-Trichloroethane	na	0.2	0.25	0.5	0.63
1,1-Dichloroethane	na	0.63	0.63	0.7	0.49
1,1-Dichloroethene	na	<0.05	<0.05	0.076	<0.05
Chlorobenzene	na	<0.05	<0.05	0.037	<0.05
Chloroethane	na	<0.05	<0.05	0.026	<0.05
Methylene Chloride	142	1.7	0.27	4.6	0.22
Non-Halogenated Organics (EPA method 8015)					
Acetone	na	na	<1	na	0.95
Methyl ethyl ketone	na	<0.2	<0.05	0.027	<0.05
Purgeable Aromatics (EPA method 602)					
Benzene	na	0.02	<0.05	0.007	<0.05
Toluene	na	0.25	<0.05	0.2	<0.05
Xylenes	na	0.05	<0.05	0.044	0.026

na - Analyses not conducted.

Note: Monitor Well V-2 has been destroyed

TABLE 4.11

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER – MONITOR WELL V-3 (mg/l)

Constituent	Nov 1987	Aug 1987	Sept 1987	March 1988	Jan 1989	Aug 1989	Dec 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)											
1,1,1-Trichloroethane	<0.0005	0.0018	0.0011	<0.0005	<0.002	0.0026	0.0022	na	<0.002	<0.002	<0.002
1,1-Dichloroethane	na	0.015	0.0066	0.007	0.0078	0.008	0.0064	na	0.0047	0.0033	<0.002
1,1-Dichloroethene	na	0.0013	0.00076	<0.0005	na	<0.002	<0.002	na	<0.002	<0.002	<0.002
1,2-Dichloroethane	na	0.001	<0.0005	<0.0005	na	<0.002	<0.002	na	<0.002	<0.002	<0.002
Methylene Chloride	0.0076	0.0063	0.012	<0.005	<0.002	0.29	0.051	na	0.014	0.053	0.0064
Trans-1,2-Dichloroethene	na	na	na	<0.005	0.0032	0.2	0.2	na	<0.002	<0.002	<0.002
Vinyl Chloride	na	<0.0005	0.00068	<0.01	na	<0.002	<0.002	na	<0.002	<0.002	<0.002
Non-Halogenated Volatile Organics (EPA method 8015)											
Acetone	<1	<1	<0.05	<0.02	na	<0.015	0.036	<0.015	0.02	<0.015	<0.015
Ethanol	<1	<1	<0.05	na	na	2.7	<0.05	<0.05	<0.05	<0.05	<0.05
Methanol	2.7	<1	<0.05	na	na	0.31	<0.06	<0.06	3.8	<0.06	<0.06
TPH as diesel	na	na	na	na	6.2	33	0.92	na	0.25	0.24	0.15
Phenols (EPA method 604)											
Pentachlorophenol	0.05	<0.001	<0.01	na	na	na	na	na	<0.002	<0.010	<0.010
Semi-Volatile Organics (EPA method 8270)											
1-[2-(2-Methoxy-1-Methyethoxy)-1-Methyloxyl-2-Propanol	na	na	na	na	0.39	na	na	na	na	na	na
4-Butoxybutanoic Acid	na	na	na	na	0.049	na	na	na	na	na	na
Benzene	na	<0.0005	<0.0005	<0.005	0.011	<0.002	<0.002	na	<0.002	<0.002	<0.002
Xylenes	na	0.008	<0.0005	<0.005	0.003	<0.002	<0.002	na	<0.002	<0.002	<0.002

na – Analyses not conducted.

TABLE 4.12
SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER – MONITOR WELL V-4 (mg/l)

Constituent	May 1987	Aug 1987	Sept 1987	Sept 1987	March 1988	Jan 1989	Jan 1989	Jan 1989	Aug 1989	Dec 1989	Jan 1990	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)														
1,1,1-Trichloroethane	0.39	0.06	0.02	0.031	0.14	0.99	0.97	1.4	0.069	1.7	0.129	0.14	0.041	0.048
1,1-Dichloroethane	1.2	0.4	1	0.31	0.36	0.68	0.69	0.85	0.27	7.8	0.328	0.29	0.23	0.24
1,1-Dichloroethene	0.14	0.036	0.028	0.016	0.06	0.066	0.066	0.079	0.033	0.19	0.0262	0.029	0.021	0.038
1,2-Dichloroethane	<0.005	<0.005	0.008	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.1	<0.005	<0.004	<0.004	<0.002
Chlorobenzene	na	<0.005	0.008	<0.005	<0.005	na	na	na	<0.002	<0.1	<0.005	<0.004	<0.004	<0.002
Chloroethane	0.012	<0.005	0.059	0.063	0.012	na	na	na	0.013	0.39	<0.01	0.0066	0.0061	0.012
Methylene Chloride	0.49	<0.005	0.003	<0.005	0.031	0.55	0.54	0.64	<0.002	3.5	0.0128	0.015	0.005	<0.002
Toluene	na	<0.005	0.017	<0.005	<0.005	na	na	na	<0.002	<0.1	<0.005	<0.004	<0.004	<0.002
Vinyl Chloride	<0.005	<0.005	na	<0.005	<0.005	na	na	na	0.0026	<0.1	<0.01	0.0054	0.0053	0.005
Non-Halogenated Volatile Organics (EPA method 8015)														
Acetone	na	<1	na	<0.05	<0.05	na	na	na	<0.015	1.7	<0.1	0.1	<0.015	<0.015
Ethanol	na	<1	na	<0.05	na	na	na	na	<0.05	16	<1	0.2	<0.05	<0.05
Isopropanol	na	<1	na	<0.05	na	na	na	na	<0.06	1.4	<1	<0.02	<0.02	<0.02
Methanol	na	<1	na	<0.05	<0.05	na	na	na	0.73	0.17	<10	<0.06	<0.06	<0.06
TPH as diesel	na	na	na	na	ND	0.27	na	na	0.082	2.1	0.3	0.12	0.24	0.35

na – Analyses not conducted.

TABLE 4.13

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER - MONITOR WELL V-5 (mg/l)

Constituent	Aug 1987	Sept 1987	March 1988	Jan 1989	Aug 1989	Jan 1990	July 1990
Volatile Organics (EPA methods 601/624)							
1,1,1-Trichloroethane	<0.0005	<0.0005	0.12	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	<0.0005	<0.0005	0.33	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethene	<0.0005	<0.0005	0.056	<0.002	<0.002	<0.002	<0.002
Chloroethane	<0.0005	<0.0005	0.013	na	<0.002	<0.002	<0.002
Methylene Chloride	<0.0005	<0.0005	0.021	<0.002	<0.002	<0.002	<0.002

na - Analyses not conducted

TABLE 4.14

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER - MONITOR WELL V-6 (mg/l)

Constituent	Aug 1987	Sept 1987	Jan 1989	Aug 1989	Jan 1990	July 1990
Volatile Organics (EPA methods 601/624)						
1,1,1-Trichloroethane	0.0025	0.0045	<0.002	<0.002	<0.002	<0.002
Benzene	<0.0005	0.0019	<0.002	<0.002	<0.002	<0.002

na - Analyses not conducted

TABLE 4.15
SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL V–7 (mg/l)

Constituent	Aug 1987	Sept 1987	March 1988	Jan 1989	Jan 1989	Aug 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)										
1,1,1–Trichloroethane	0.016	0.023	0.018	0.0087	0.012	0.0067	<0.002	0.0033	0.0043	0.0034
1,1–Dichloroethane	0.024	0.019	0.029	0.016	0.02	0.012	0.005	0.015	0.013	0.0075
1,1–Dichloroethene	0.0019	0.0024	0.0081	0.0043	0.007	0.0033	<0.002	0.0034	0.0037	0.0032
Acetone	<1	<0.050	nd	na	na	<0.010	0.012	<0.010	<0.010	<0.010
Methylene Chloride	<0.0005	<0.0005	nd	<0.002	<0.002	0.0048	0.0048	<0.002	<0.002	<0.002

na – Analyses not conducted.

TABLE 4.16
SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL V–8 (mg/l)

Constituent	March 1988	March 1988	Jan 1989	Aug 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA method 601/624)								
1,1,1–Trichloroethane	0.0035	0.0037	0.004	0.0028	0.0025	0.0026	0.0026	0.0031
1,1–Dichloroethane	<0.002	0.00069	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1–Dichloroethene	<0.002	0.00065	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
2–Propanone	0.003	na	na	na	na	na	na	na

na – Analyses not conducted.

TABLE 4.17
SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL V–9 (mg/l)

Constituent	March 1988	March 1988	Jan 1989	Aug 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)								
1,1,1–Trichloroethane	<0.002	0.0022	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1–Dichloroethane	0.0036	0.0039	0.0028	0.0027	0.0029	0.0028	0.0026	0.0026
2–Propanone	0.0051	na	na	na	na	na	na	na
Toluene	<0.002	<0.0005	na	<0.002	0.0023	<0.002	<0.002	<0.002

na – Analyses not conducted.

TABLE 4.18

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER – MONITOR WELL V-10 (mg/l)

Constituent	March 1988	March 1988	March 1988	Jan 1989	Aug 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)									
1,1,1-Trichloroethane	<0.005	<0.002	0.00096	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Methylene Chloride	<0.005	<0.002	<0.0005	[illegible]2	<0.002	<0.002	0.003	0.0039	<0.002

na – Analyses not conducted.

TABLE 4.19

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER – MONITOR WELL V-11

Constituent	June 1990			

No target constituents were detected exceeding the minimum detection limit

TABLE 4.20

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER – MONITOR WELL V-12

Constituent	June 1990			

No target constituents were detected exceeding the minimum detection limit

TABLE 4.21

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL I-1 (mg/l)

Constituent	Aug 1987	Sept 1987	March 1988	Jan 1989	Aug 1989	Dec 1989	Jan 1989	April 1990	July 1990
Volatile Organics (EPA methods 601/624)									
1,1,1-Trichloroethane	0.0019	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
1,1-Dichloroethane	0.0023	0.003	0.0029	0.0026	0.002	<0.002	<0.002	<0.002	<0.002

na – Analyses not conducted.

TABLE 4.22

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL I-2 (mg/l)

Constituent	Aug 1987	Sept 1987	March 1988	Jan 1989	Aug 1989	Dec 1989	Jan 1990	April 1990	July 1990
Volatile Organics (EPA methods 601/624)									
1,1,1-Trichloroethane	0.0068	<0.0005	0.003	0.0028	0.0027	0.0036	0.0032	0.0022	0.003
1,1-Dichloroethane	0.014	<0.0005	0.0045	0.0036	0.0035	0.0046	0.0029	0.0025	0.003
1,1-Dichloroethene	0.0071	<0.0005	0.0024	0.0021	0.0023	0.0026	<0.002	<0.002	0.0022

na – Analyses not conducted.

TABLE 4.23

SUMMARY OF RESULTS OF ANALYSES OF GROUNDWATER SAMPLES – MONITOR WELL I-3 (mg/l)

Constituent	Aug 1987	Sept 1987	March 1988	Jan 1989	Aug 1989	Jan 1990	July 1990
Phenols (EPA method 8040)							
Phenol	na	0.02	na	na	<0.002	<0.002	0.0036

na – analyses not conducted

FIGURES

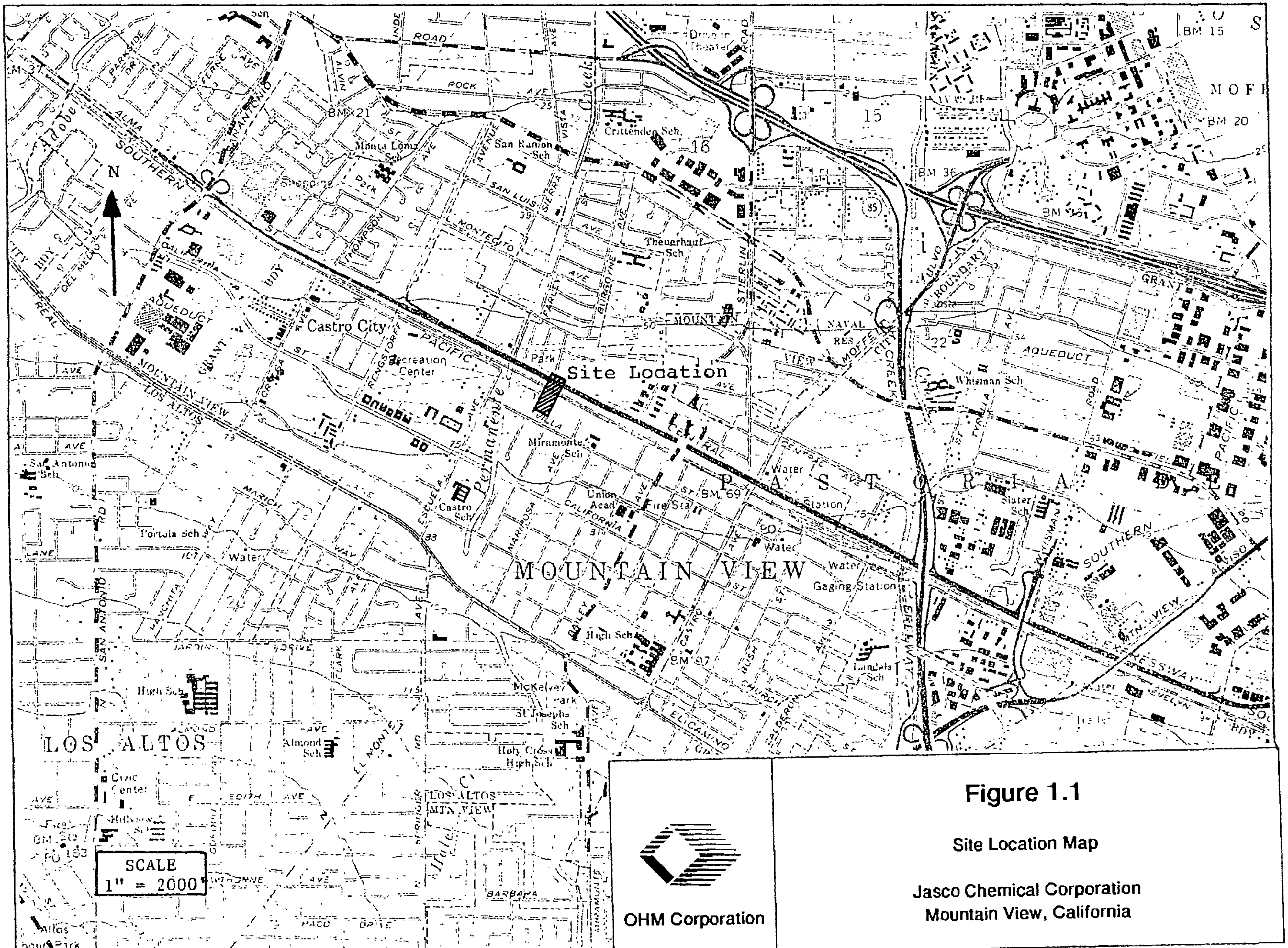
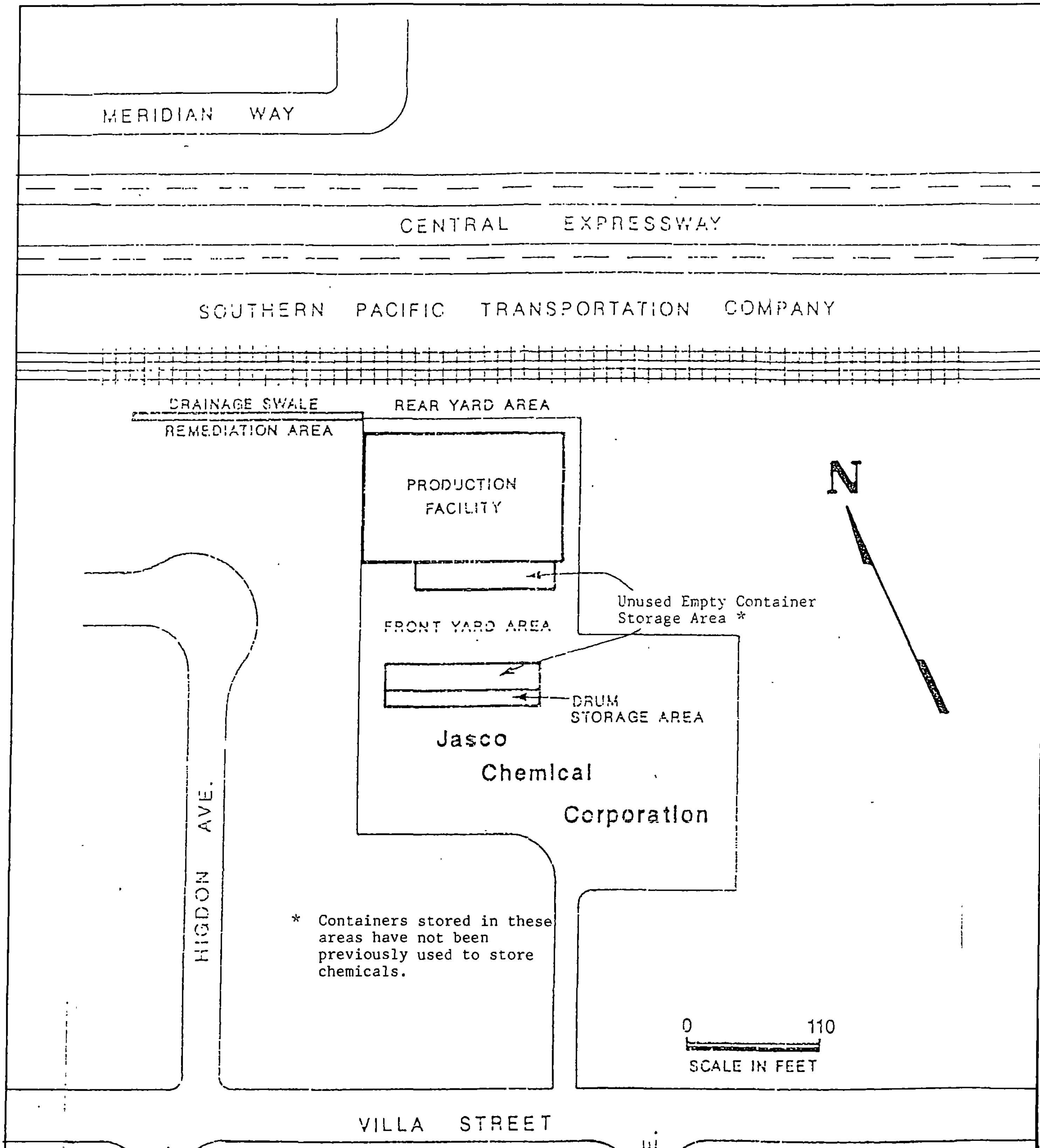


Figure 1.1

Site Location Map

Jasco Chemical Corporation
Mountain View, California

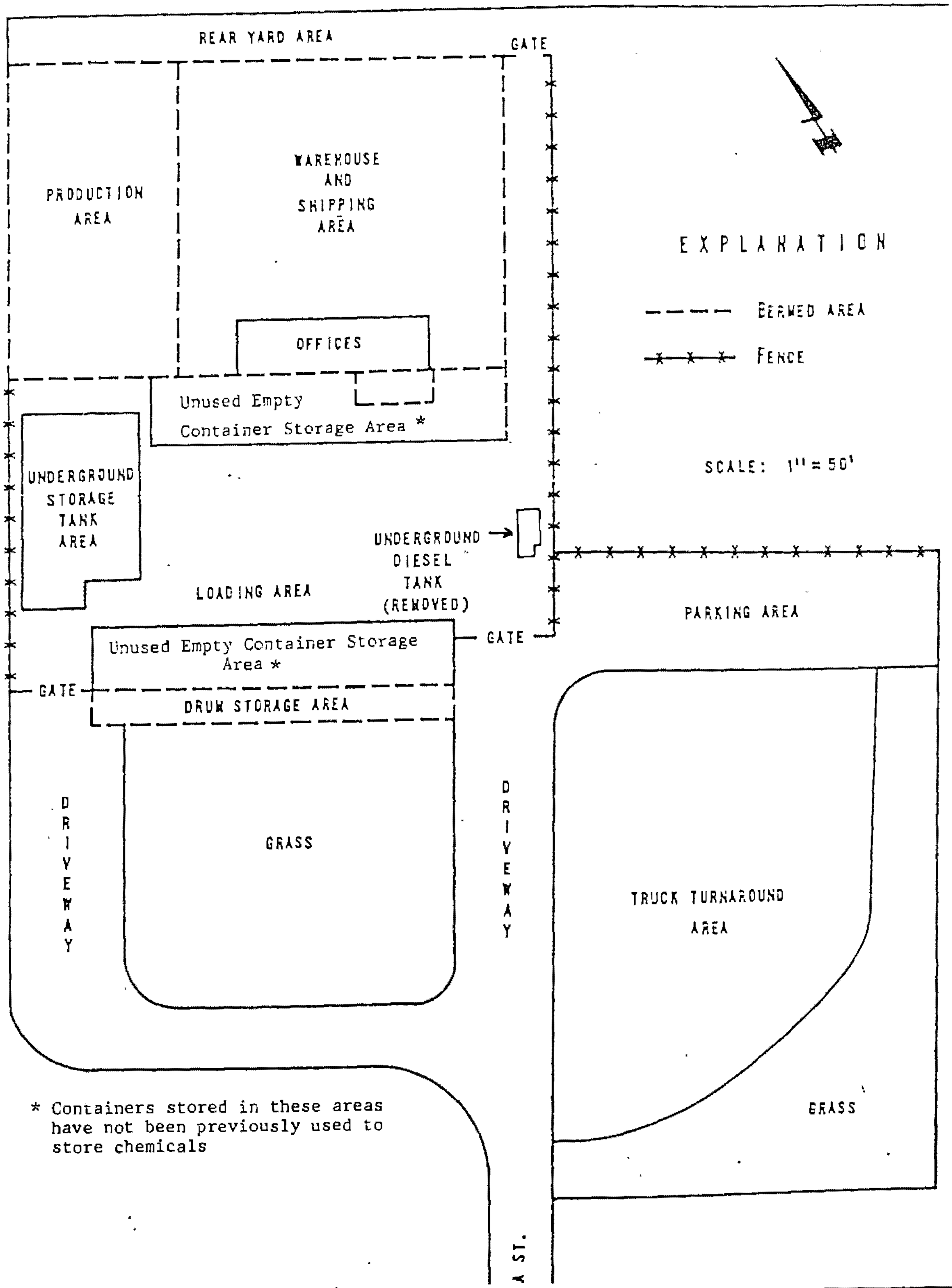


OHM Corporation

Figure 1.2

Site Plan

Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 1.3

Existing and Former Structures

Jasco Chemical Corporation
Mountain View, California

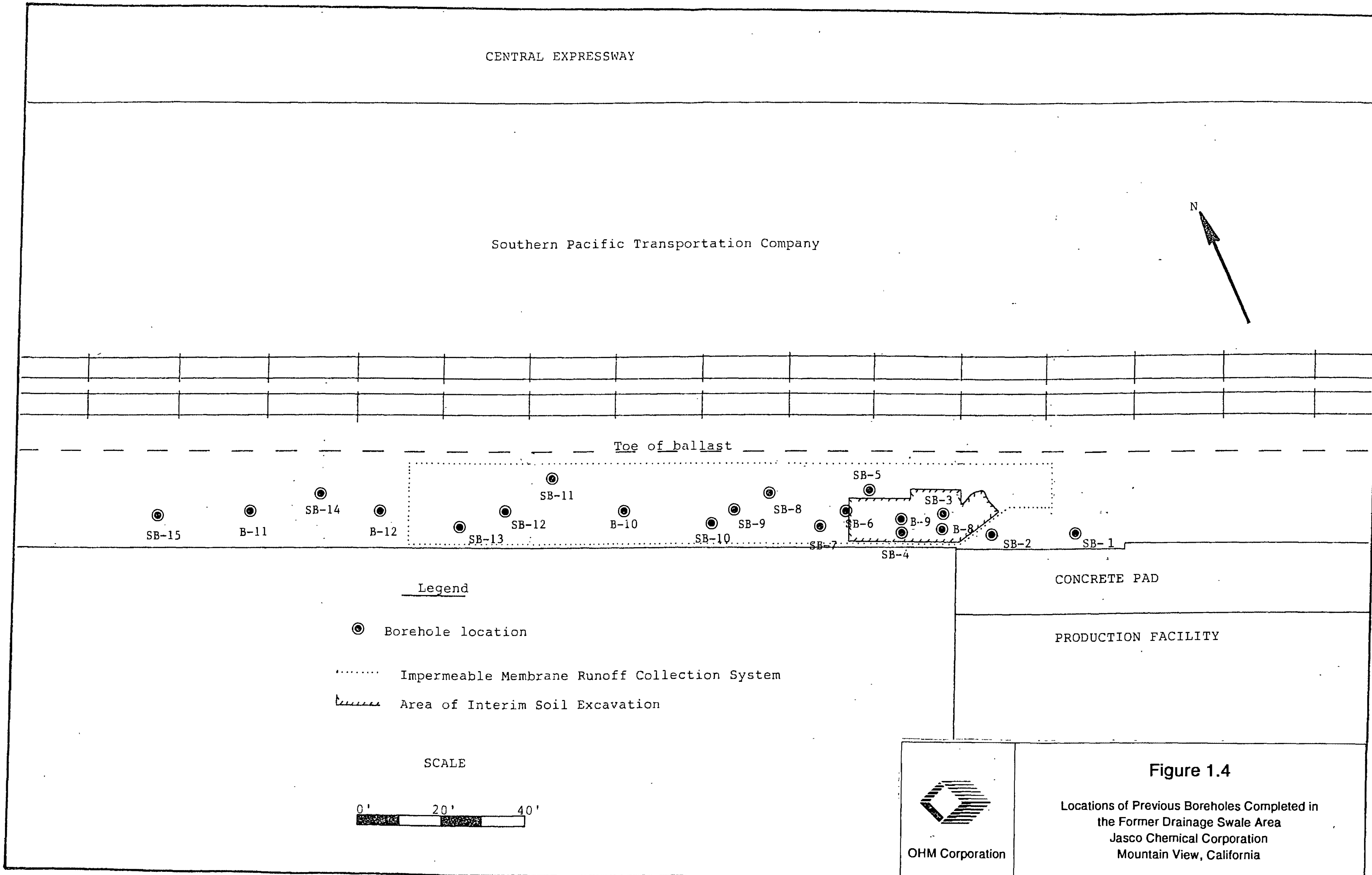
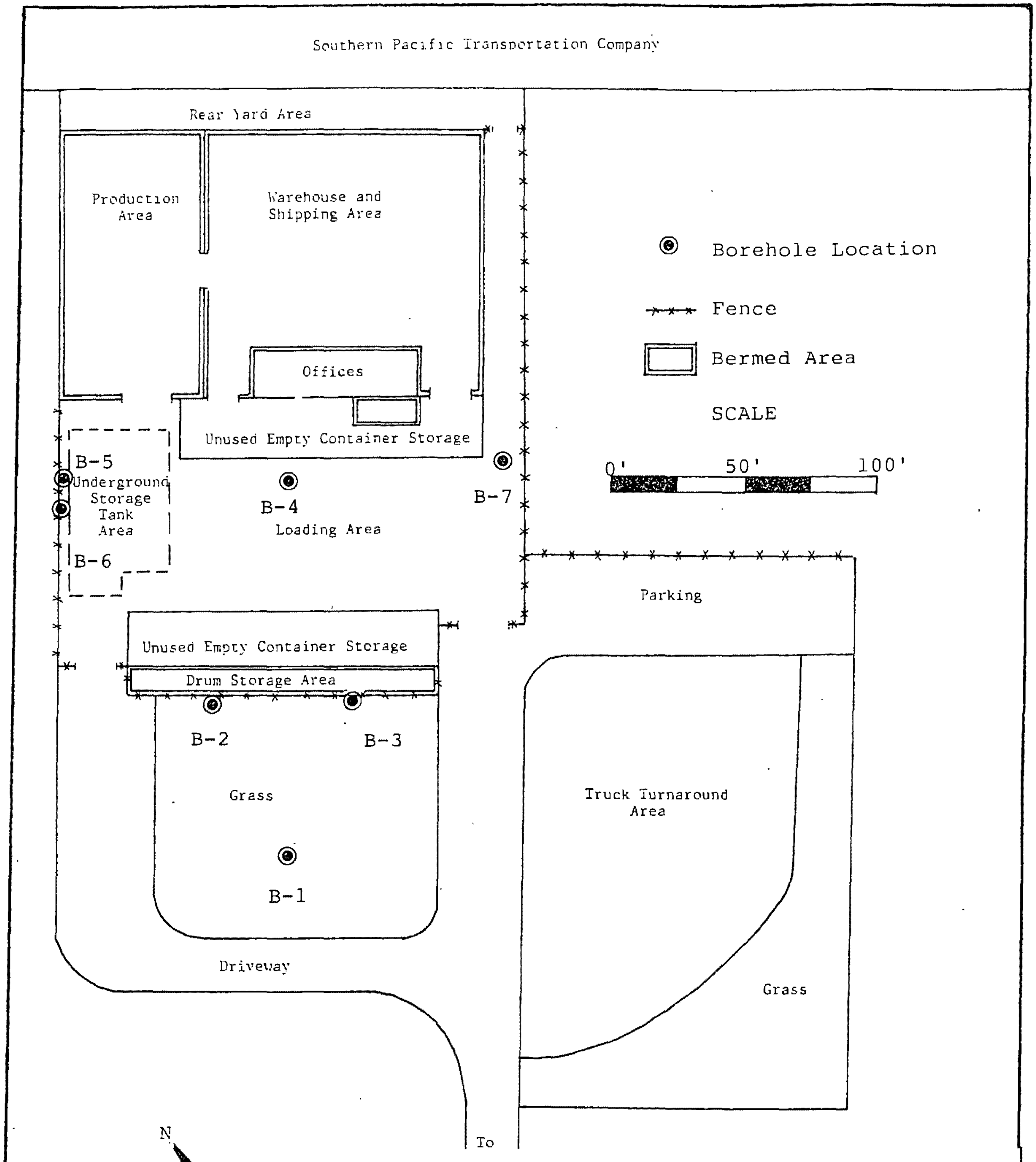


Figure 1.4

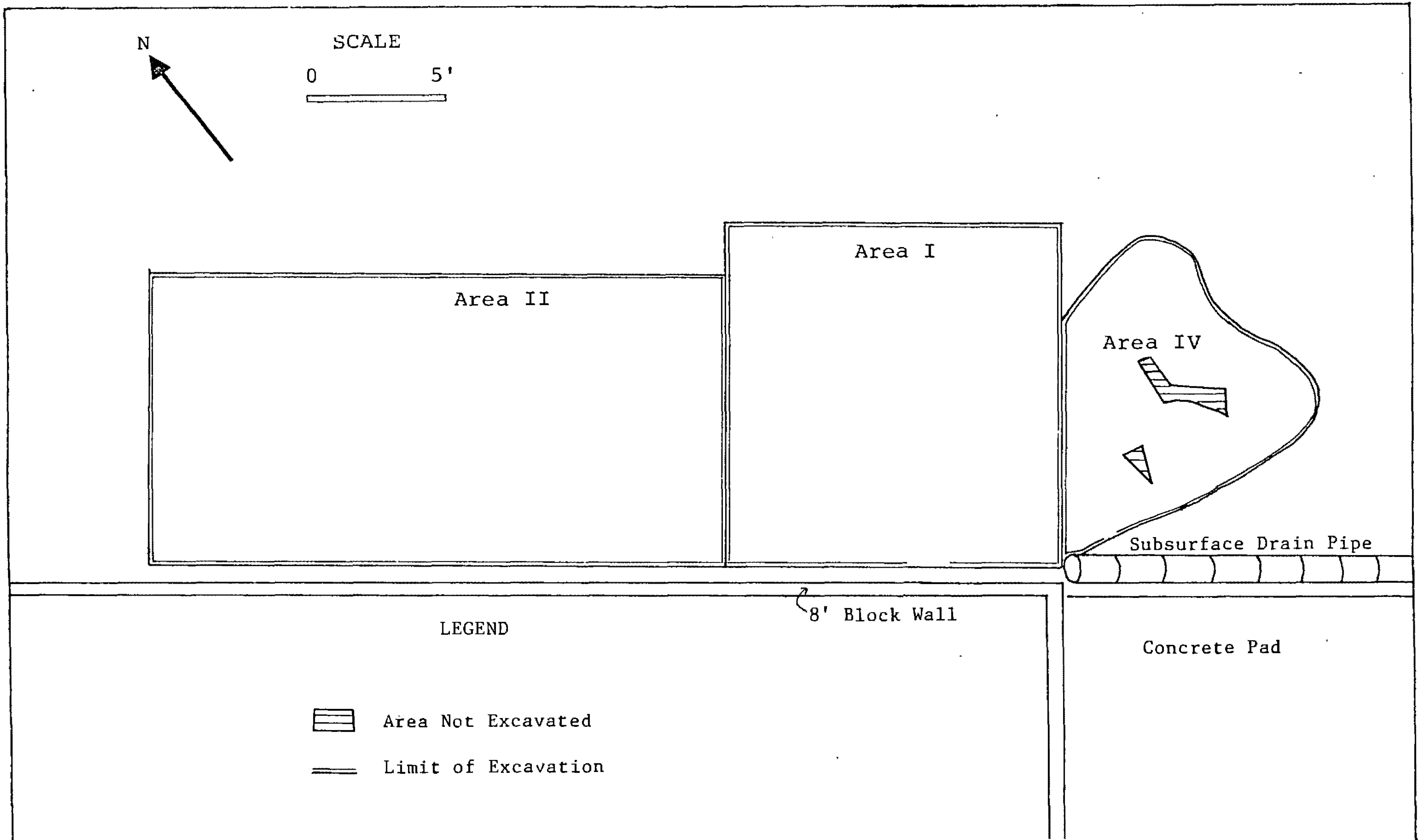
Locations of Previous Boreholes Completed in the Former Drainage Swale Area
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 1.5

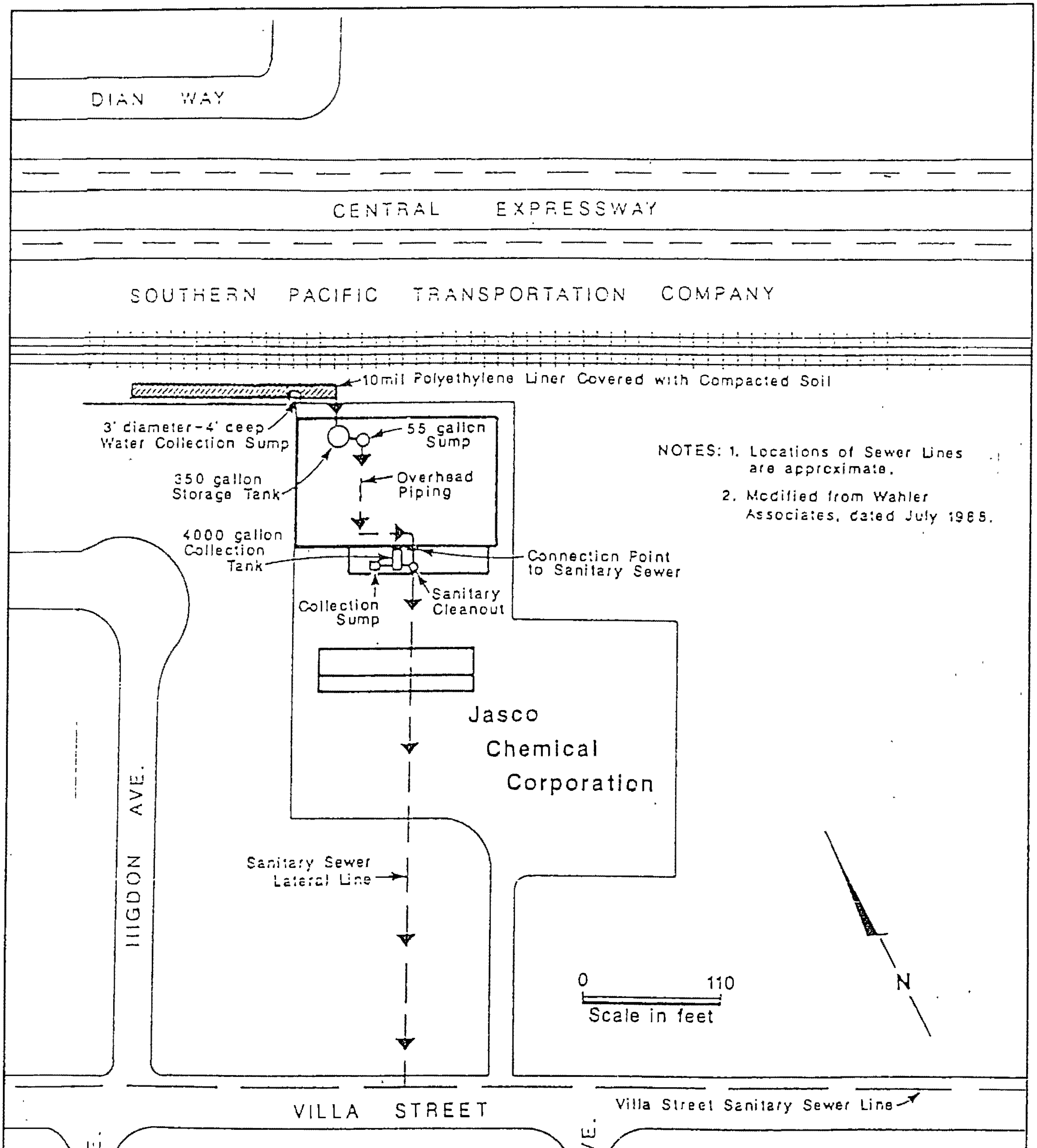
Locations of Previous Boreholes
Completed On-Site
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 1.6

Boundaries of Interim Soil Excavation Area
Former Drainage Swale Area
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 1.7

Runoff Collection System

Jasco Chemical Corporation
Mountain View, California

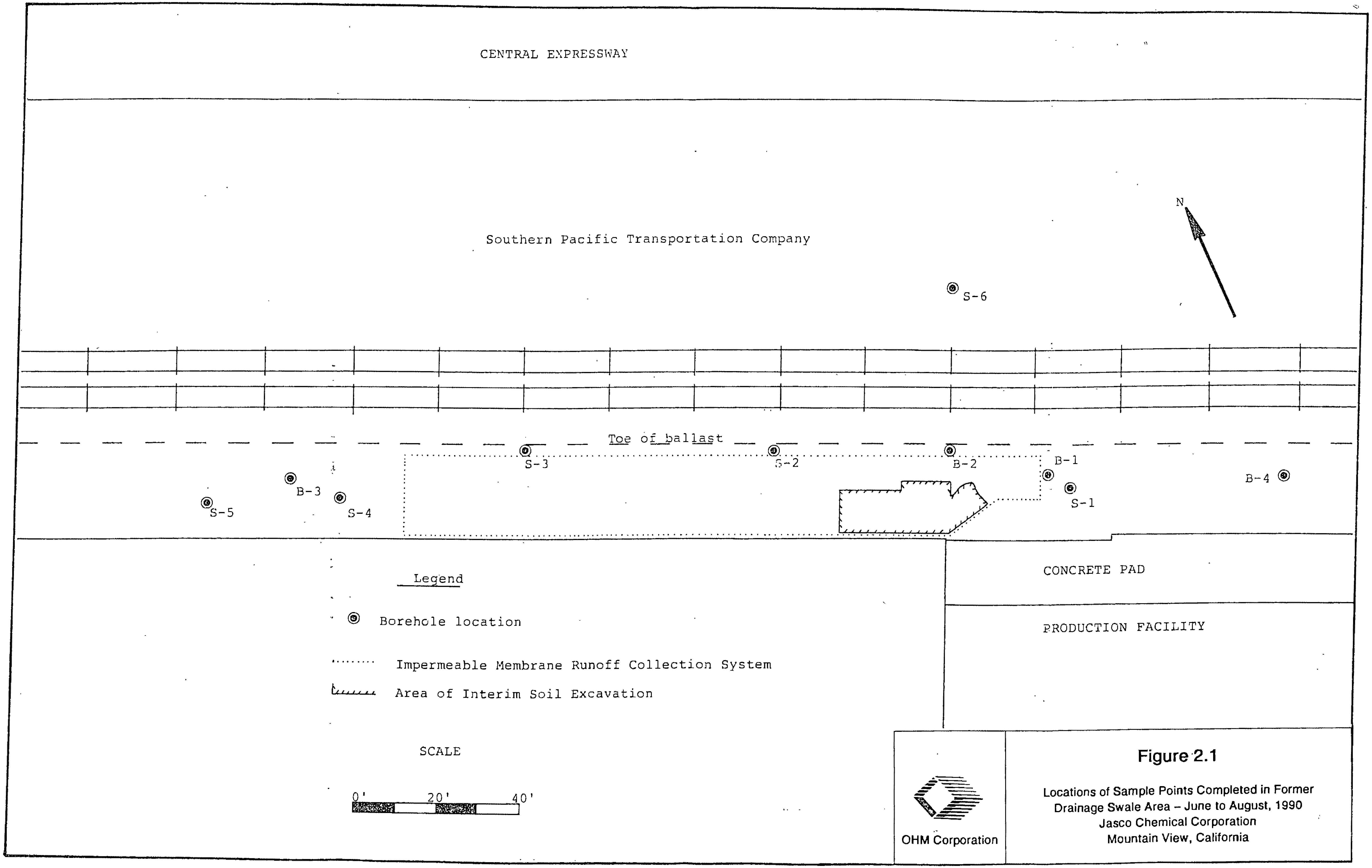
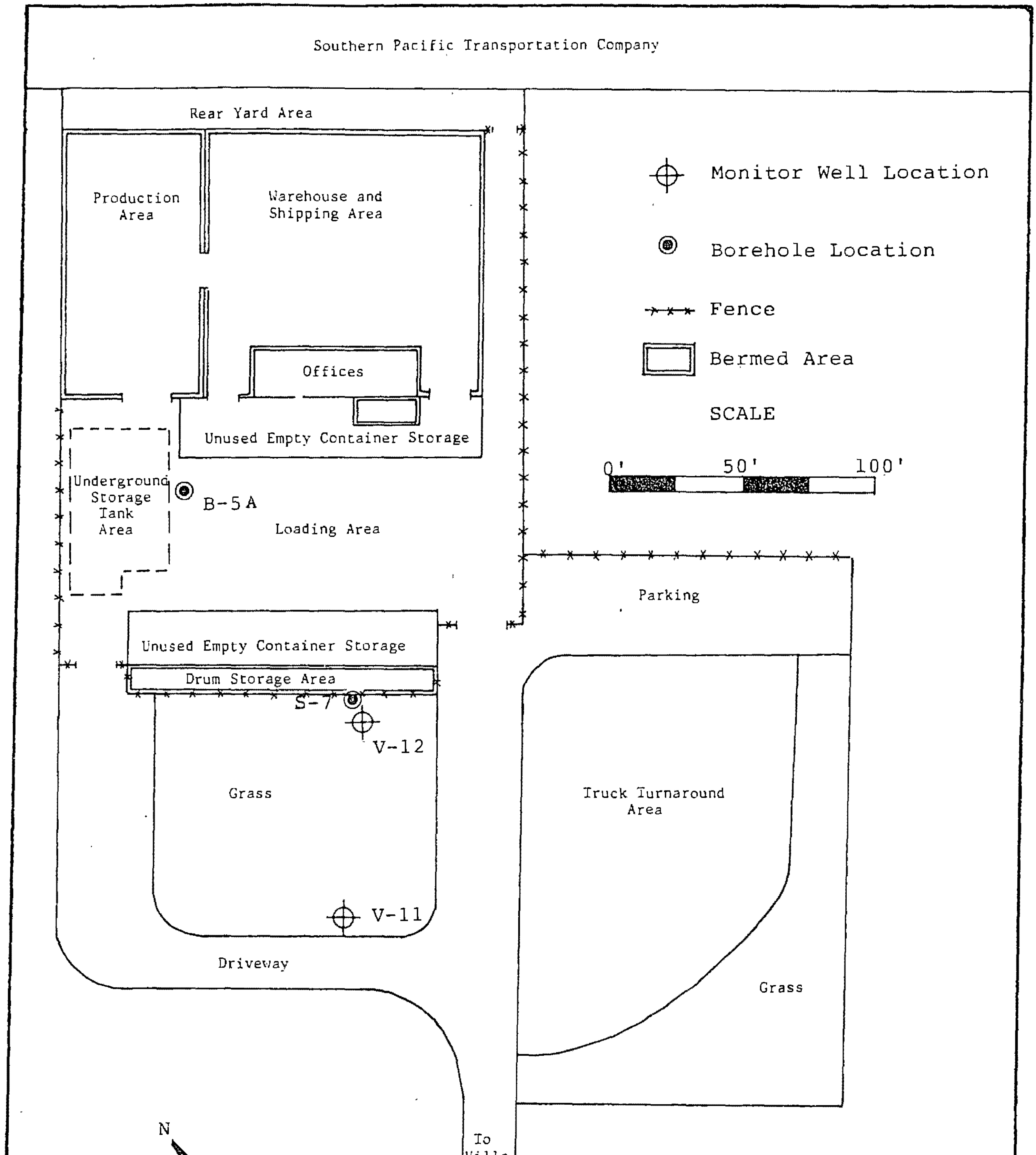


Figure 2.1

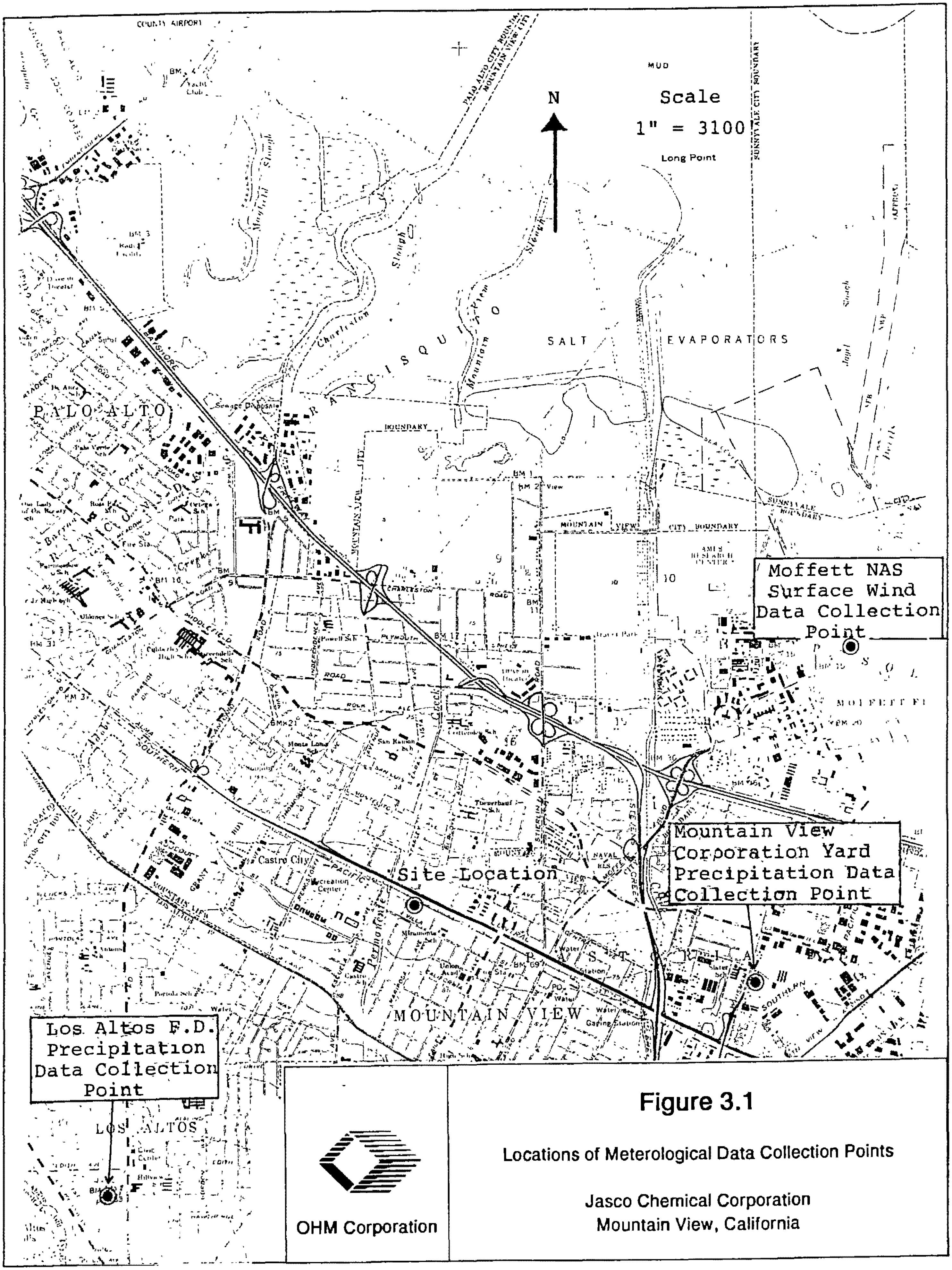
Locations of Sample Points Completed in Former Drainage Swale Area – June to August, 1990
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 2.2

Locations of Sample Points Completed On-Site
June to August, 1990
Jasco Chemical Corporation
Mountain View, California

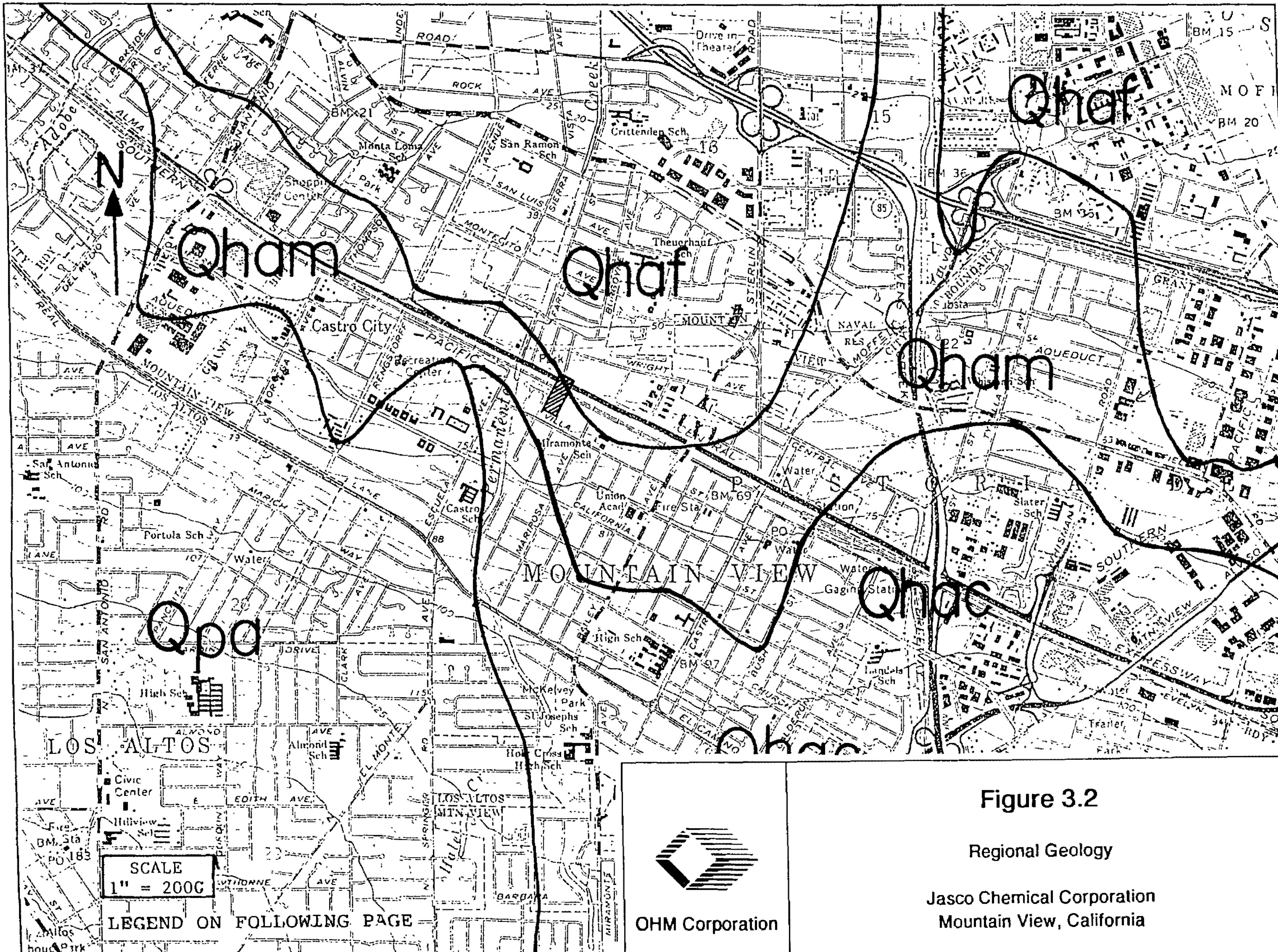


OHM Corporation

Figure 3.1

Locations of Meterological Data Collection Points

Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 3.2

Regional Geology

Jasco Chemical Corporation
Mountain View, California

LEGEND

Qhaf - Fine-grained alluvium.

Unconsolidated, plastic, moderately poorly sorted silt and clay rich in organic material. Irregularly bedded. Holocene age.

Qham - Medium-grained alluvium.

Unconsolidated, moderately sorted, moderately permeable fine sand, silt and clayey silt with occasional thin beds of coarse sand. Well bedded. Holocene age.

Qhac - Coarse-grained alluvium.

Unconsolidated, moderately sorted, permeable sand and silt with coarse sand and gravel becoming abundant toward fan heads and in narrow canyons. Well bedded. Holocene age.

Qpa - Late Pleistocene alluvium.

Weakly consolidated, slightly weathered, poorly sorted, irregular interbedded clay, silt, sand, and gravel. Grades progressively from coarse-grained stream deposits at the heads of old alluvial fans into fine-grained alluvial fans and fresh-water marsh deposits near the present shore of the bay.

Source: Geological Survey Professional Paper 943, 1979

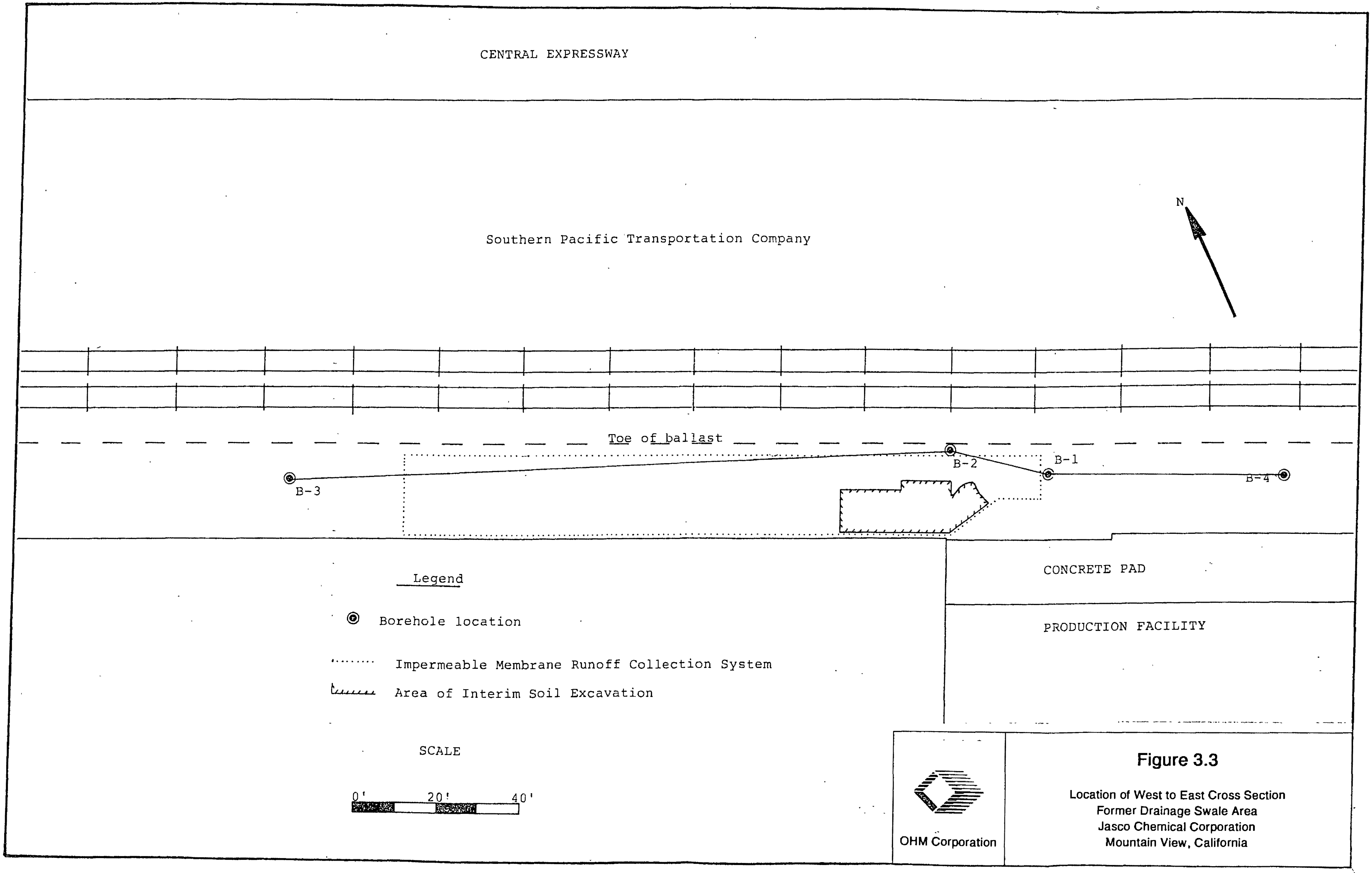
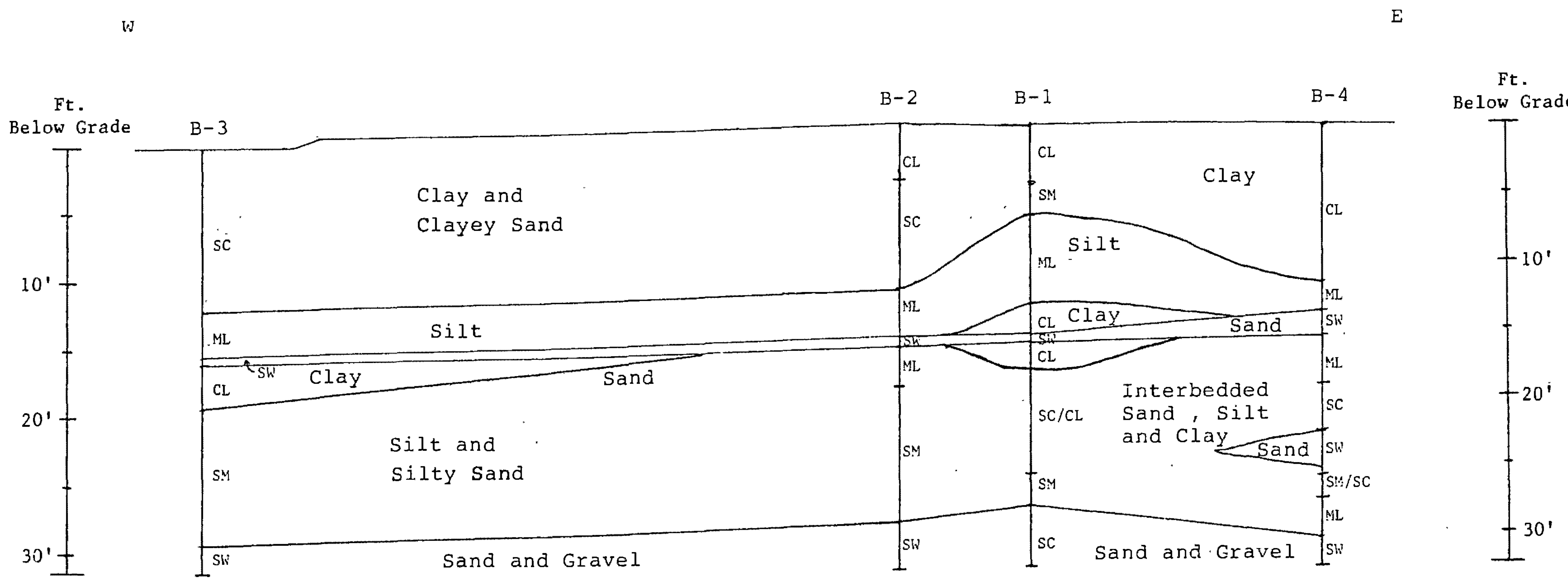


Figure 3.3

Location of West to East Cross Section
Former Drainage Swale Area
Jasco Chemical Corporation
Mountain View, California



LEGEND

SW - Poorly sorted sands, gravelly sands, little or no fines

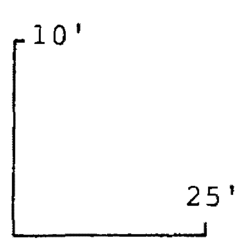
SC - Clayey sands, sand-clay mixtures

SM - Silty sands, sand-silt mixtures

ML - Silt and very fine sand

CL - Clays of low to medium plasticity, gravelly clay, sandy clay, silty clay

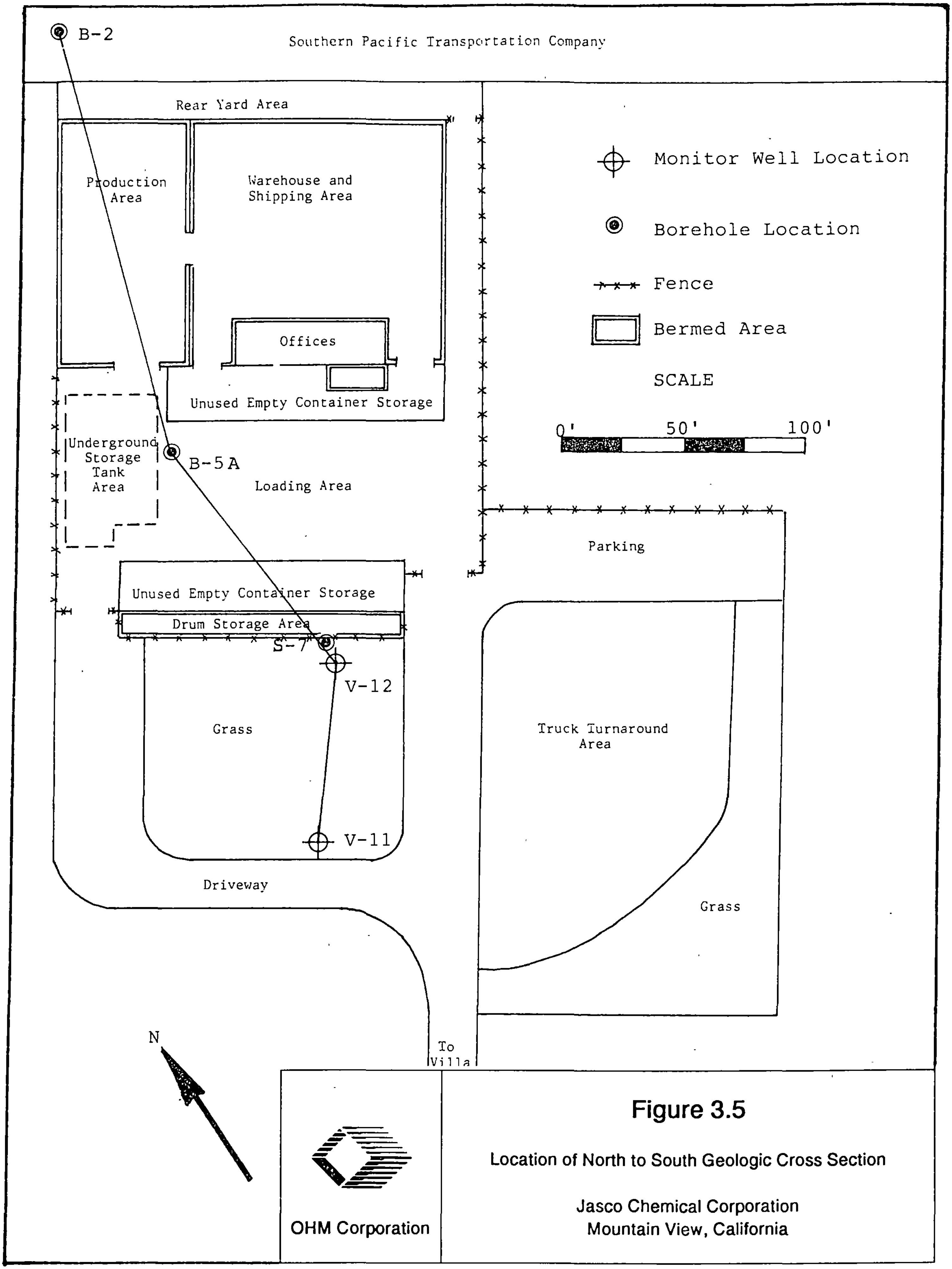
SCALE



OHM Corporation

Figure 3.4

West to East Geologic Cross Section
Former Drainage Swale Area
Jasco Chemical Corporation
Mountain View, California

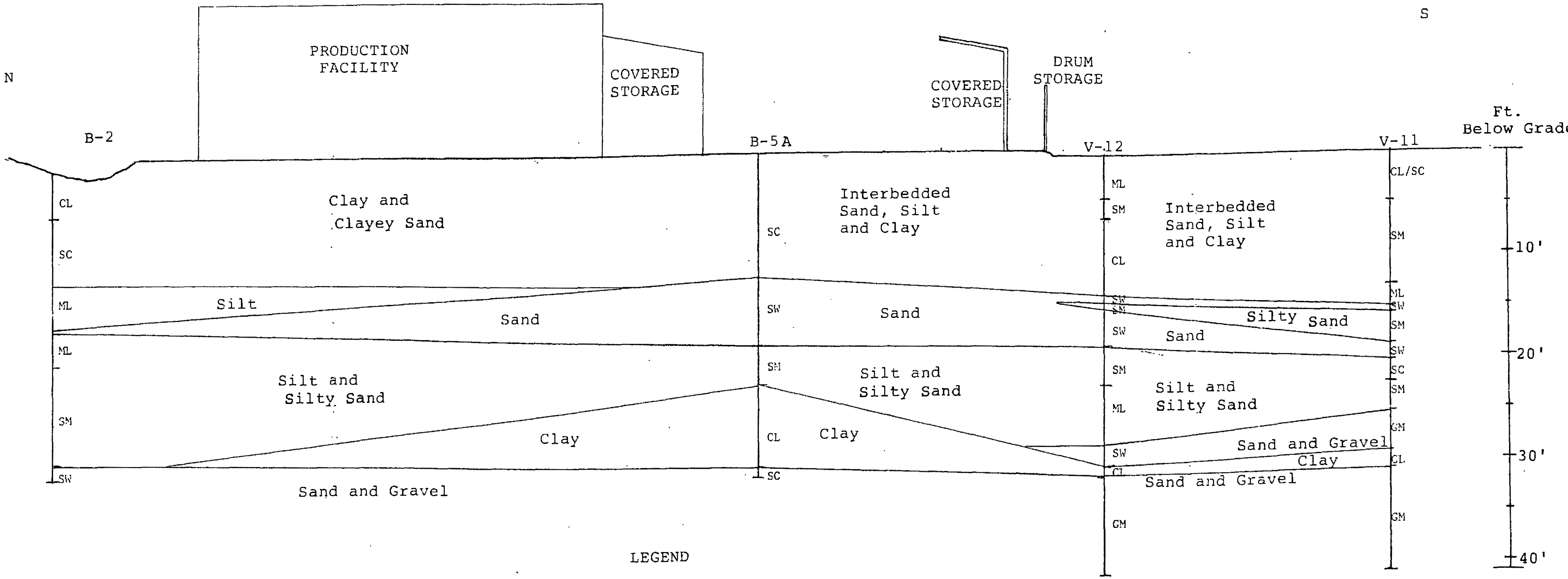


OHM Corporation

Figure 3.5

Location of North to South Geologic Cross Section

Jasco Chemical Corporation
Mountain View, California



LEGEND

GM - Silty gravels, gravel-sand-silt mixtures

SW - Poorly sorted sands, gravelly sands, little or no fines

SC - Clayey sands, sand-clay mixtures

SM - Silty sands, sand-silt mixtures

ML - Silt and very fine sand

CL - Clays of low to medium plasticity, gravelly clay, sandy clay, silty clay

SCALE

10'

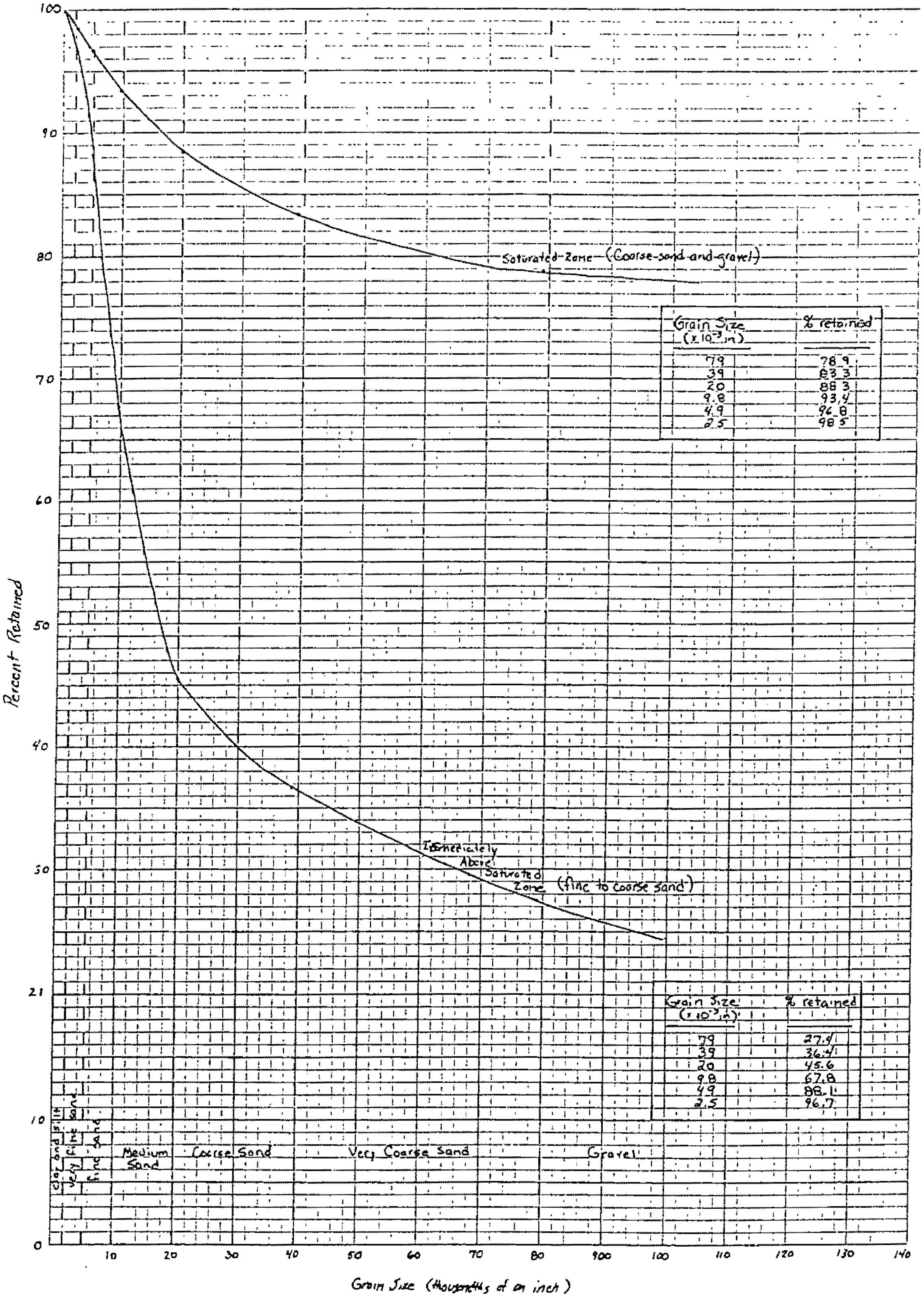
25'

OHM Corporation

Figure 3.6

North to South Geologic Cross Section

Jasco Chemical Corporation
Mountain View, California



Grain Size ($x\ 10^{-3}$ in)	% retained
79	78.9
39	83.3
20	88.3
9.8	93.4
4.9	96.8
2.5	98.5

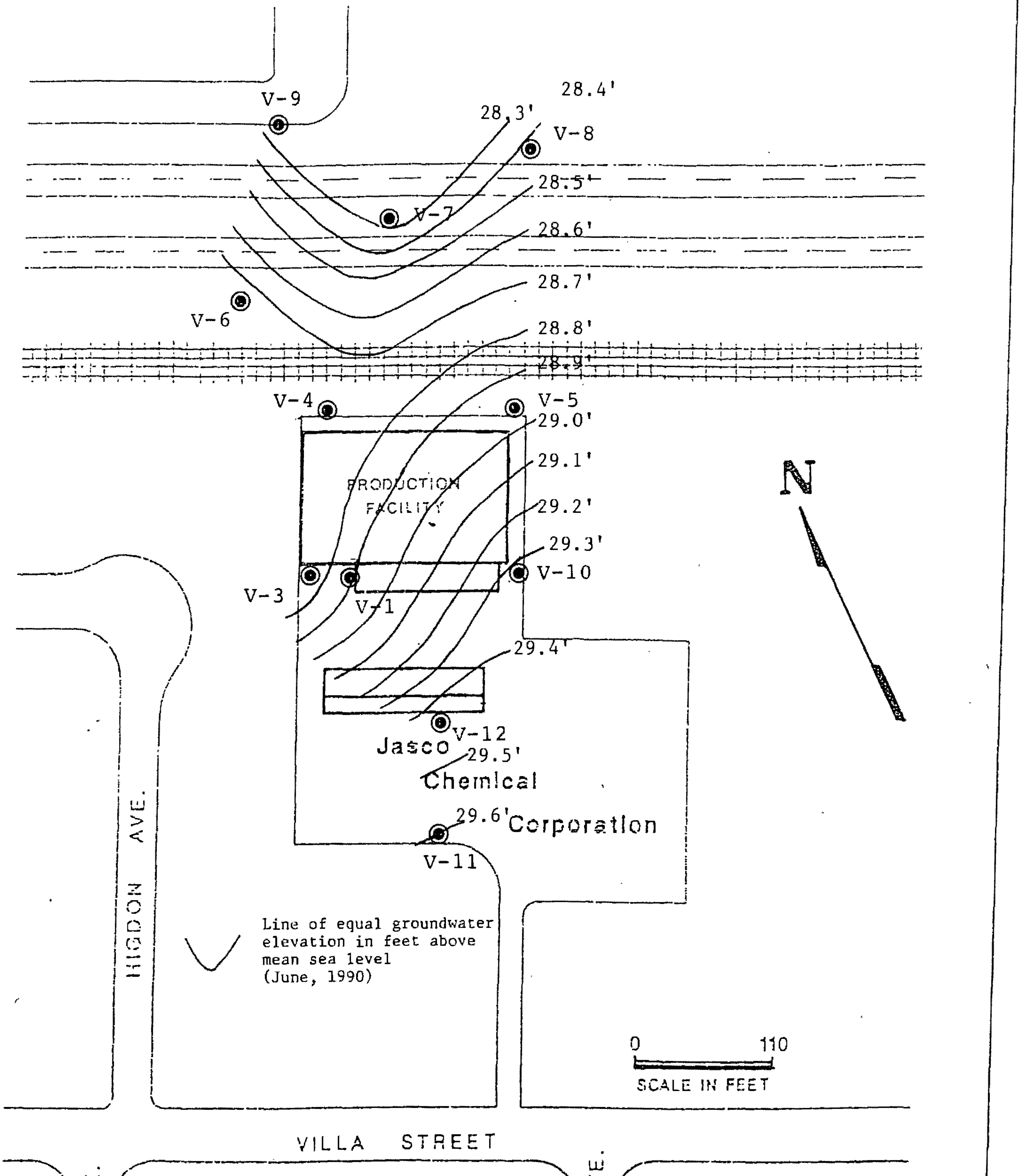
Grain Size ($x\ 10^{-3}$ in)	% retained
79	27.4
39	36.4
20	45.6
9.8	67.8
4.9	88.1
2.5	96.7

OHM Corporation

Figure 3.7

Sieve Analysis Data

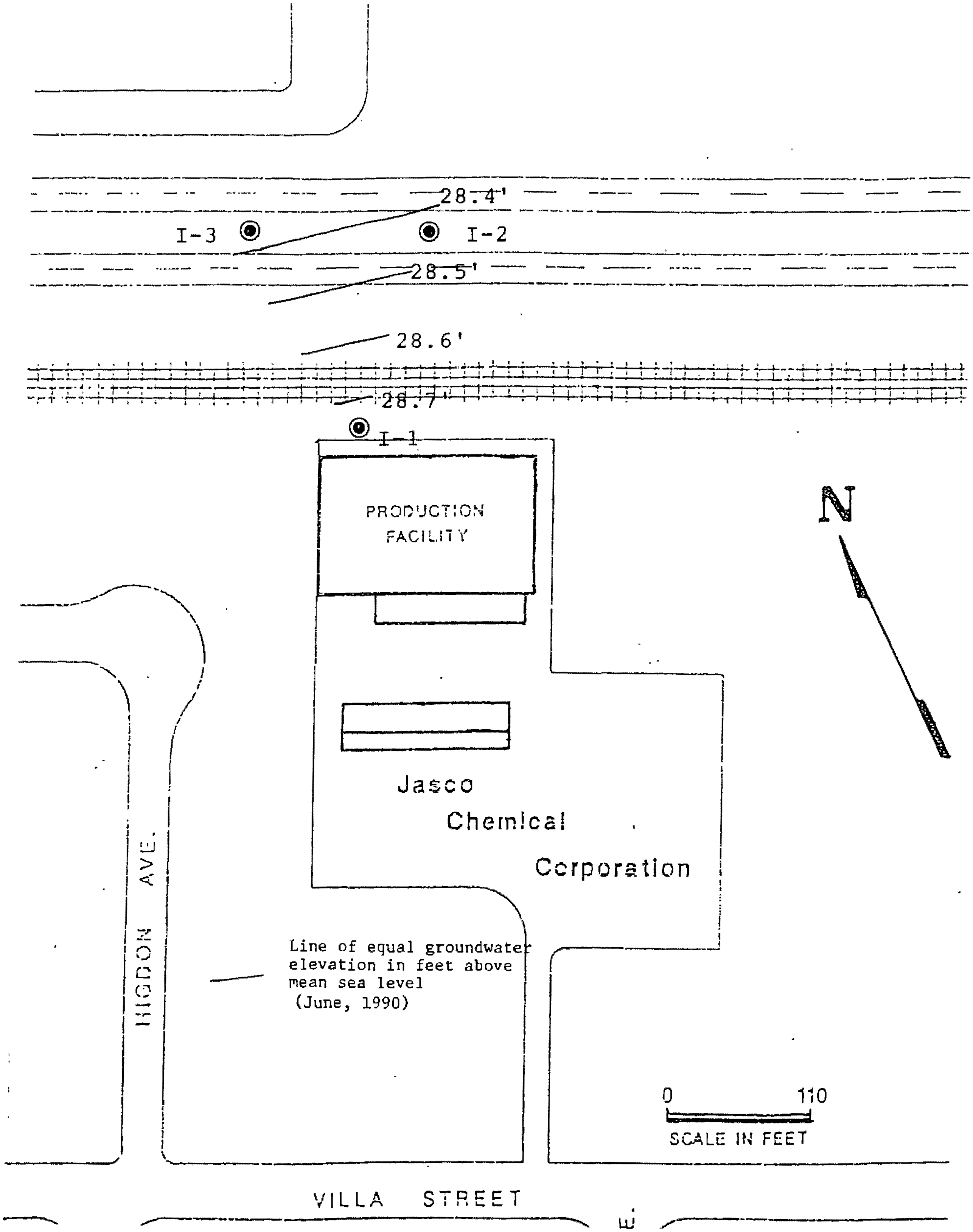
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 3.8

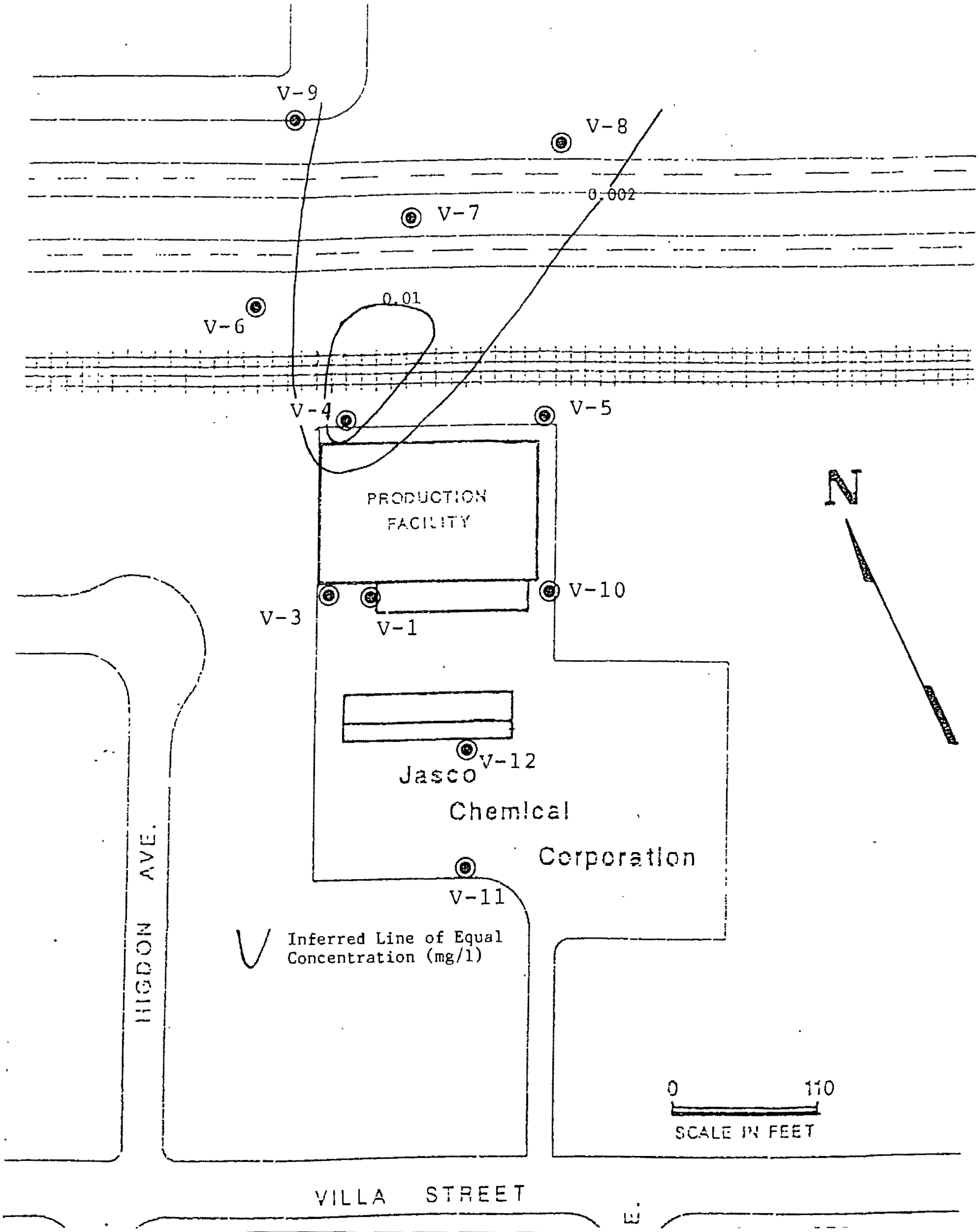
A-Aquifer Monitor Well Network and Groundwater Levels
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 3.9

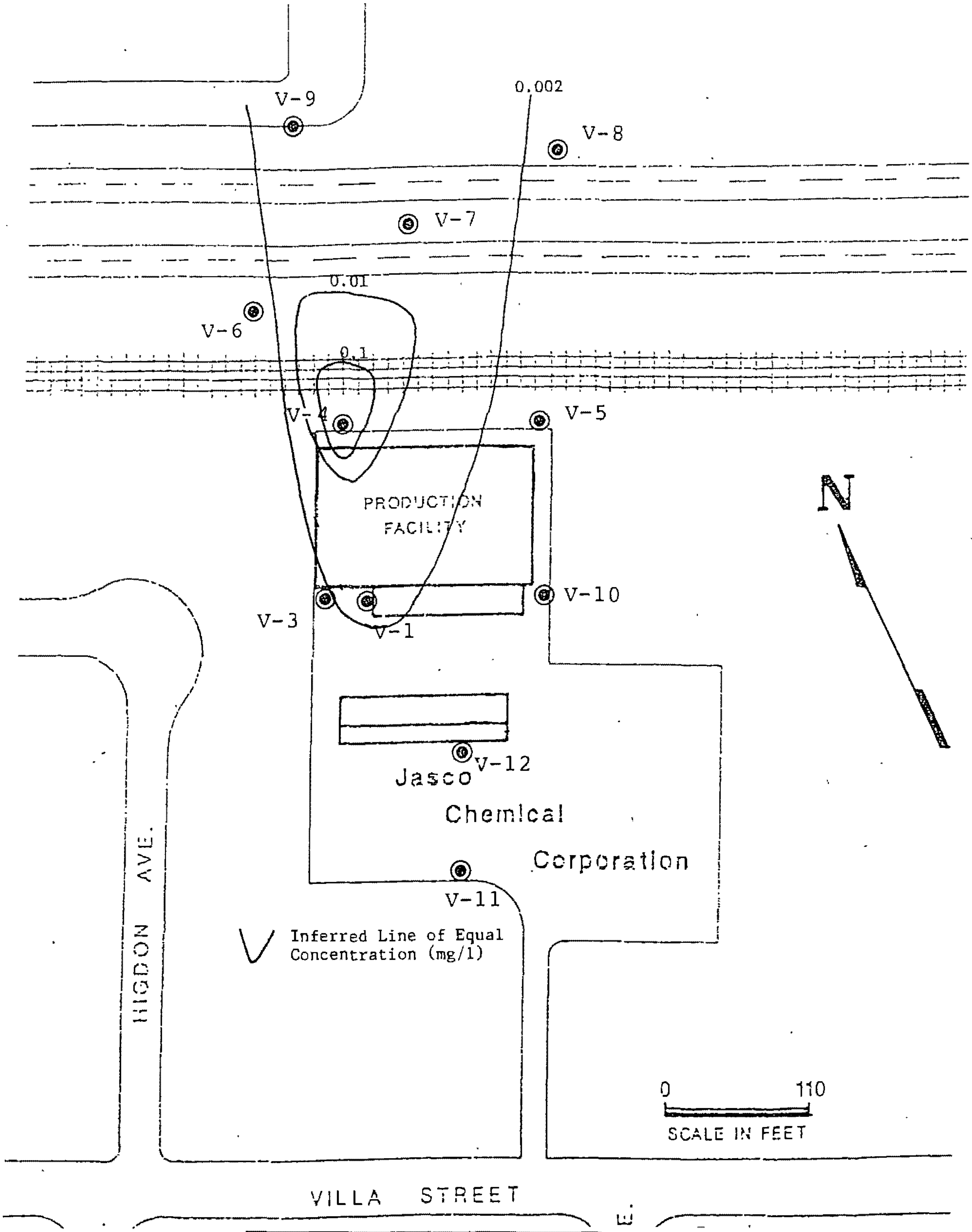
B(1)-Aquifer Monitor Well Network and
Groundwater Levels
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 4.1

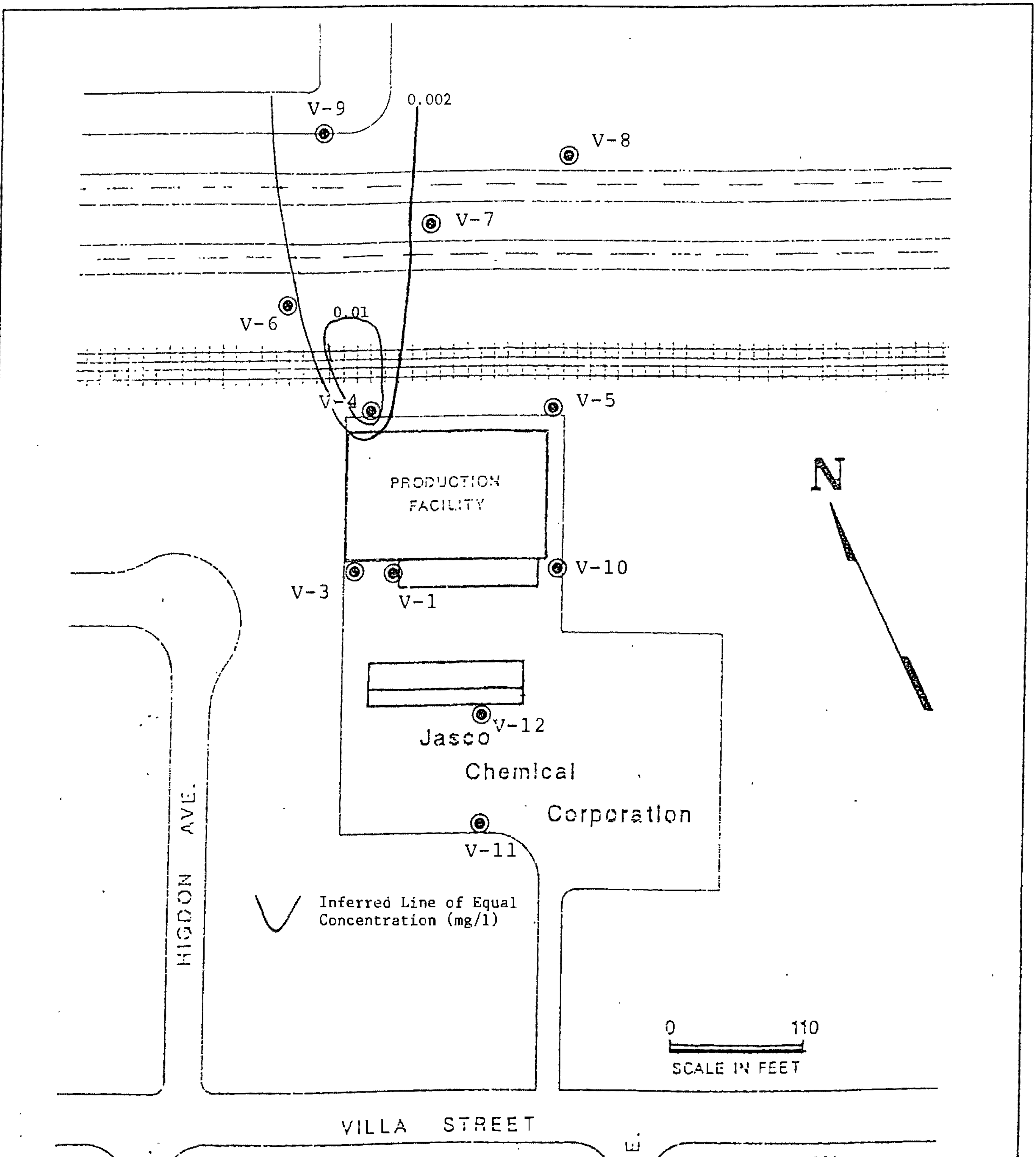
Distribution of 1,1,1-Trichloroethane
A-Aquifer Monitor Wells
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 4.2

Distribution of 1,1-Dichloroethane
A-Aquifer Monitor Wells
Jasco Chemical Corporation
Mountain View, California



OHM Corporation

Figure 4.3

Distribution of 1,1-Dichloroethene
A-Aquifer Monitor Wells
Jasco Chemical Corporation
Mountain View, California

VOLUME II
APPENDICES A THROUGH F

DRAFT REMEDIAL INVESTIGATION REPORT
JASCO CHEMICAL CORPORATION
1710 VILLA STREET
MOUNTAIN VIEW, CALIFORNIA

APPENDIX A
REFERENCES FOR PREVIOUS WORK CONDUCTED

REFERENCES

Questa Engineering Corporation, Preliminary Groundwater Investigation, June 1984.

Questa Engineering Corporation, Jasco Monitoring Well V-2, October 20, 1986.

Questa Engineering Corporation, Installation of Well V-3, Permeability Studies, Soil and Groundwater Sampling and Analysis, December 5, 1986.

Wahler Associates, Preliminary Report Shallow Soil Gas Investigation, December 1986.

Wahler Associates, Phase I Groundwater Investigation Workplan, March 4, 1987.

Wahler Associates, Chemical Testing Results, Collection Sump, April 27, 1987.

Wahler Associates, Phase I Hydrogeologic Investigation, June 1987

Wahler Associates, Site Inspection Report, June 1987

Wahler Associates, On-Site Source Identification Investigation, July 1987.

Wahler Associates, Well Location Maps, July 30, 1987

Wahler Associates, Collection and Disposal of Surface Runoff, September 16, 1987.

Wahler Associates, On-Site Runoff Management, November 2, 1987.

Wahler Associates, Phase II Hydrogeologic Investigation, November 1987.

Wahler Associates, Aquifer Testing Report, December 21, 1987.

Wahler Associates, Quality Assurance/Quality Control Project Plan, December 1987.

Wahler Associates, Sampling Plan, December 1987

Wahler Associates, Site Health and Safety Plan, December 1987

Wahler Associates, Proposal for Potential Conduit Investigation, December 1987.

Wahler Associates, Installation of Diesel Tank Monitoring Well, December 30, 1987.

3007/104 Response Letters, February 5, 1988

Wahler Associates, Excavation and Removal of Diesel Tank, February 8, 1988.

Wahler Associates, Interim Runoff Management Plan, February 29, 1988.

Wahler Associates, Phase IIa Hydrogeologic Investigation, March 1988.

Wahler Associates, Potential Conduits Investigation Preliminary Report, March 1988.

Wahler Associates, Potential Conduits Investigation, May 1988

Wahler Associates, Surface Water and Soil Sampling Investigation, May 6, 1988.

Wahler Associates, Destruction of Dry Wells, June 9, 1988.

Wahler Associates, Evaluation of Interim Remedial Alternatives, Volume 1 and 2, June 1988.

Harding Lawson Associates, Evaluation of Current Site Conditions, Jasco Chemical Corporation, 1710 Villa Street, Mountain View, California, January 25, 1989.

Harding Lawson Associates, Interim Remedial Measures October through November, 1988, Jasco Chemical Corporation, Mountain View, California, February 15, 1989.

Harding Lawson Associates, Summary of Work To Date, Jasco Chemical Corporation, Mountain View, California, February 16, 1989.

Tracer Research Corporation, Tracer Leak Testing Proposal For 8 Underground Storage Tanks at the Jasco Chemical Facility Mountain View, California, April 1989.

O.H. Materials Corporation, Revised Workplan for Remedial Investigation/Feasibility Study, Jasco Chemical Corporation, Mountain View, California, August 31, 1989.

In addition, monthly status reports documenting progress in the investigation and remediation of the site have been prepared by Jasco Chemical Corporation's environmental consultants and submitted to the California Regional Water Quality Control Board since March of 1987. Quarterly groundwater monitoring reports have also been submitted to the RWQCB since this time.

APPENDIX B
BOREHOLE LITHOLOGIC LOGS

PART 1

PAGE 1 OF 1

JOB NO. 7403			BORE HOLE NO. B-1
PROJECT Jasco Chemical Corp.		LOCATION Mountain View, CA	
DRILLING CONTRACTOR ASE Drilling		DRILLING EQUIPMENT '8" Hollow Stem Auger	
HYDROGEOLOGIST Scott Rice		DRILLER Chris	
DATE START/TIME 7/13/90 0900	DATE FINISH/TIME 7/13/90 1045	SURFACE ELEVATION	TOTAL DEPTH 31.5 feet
WELL CASING	SCREEN TYPE	LENGTH	SLOT

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
	B-1-3	7/9/14	16"	CL - sandy clay, black (7.5YR 2/0), 30-40% medium sand, subrounded particles to 2 mm diameter, low plasticity	hydrocarbon odor PID (sample) - 60	
				cuttings grade lighter in color		
5	B-1-5	4/5/8	13"	SM - silty fine to medium sand, very dark gray (7.5YR 3/0), 30% silt, trace clay, moist, poorly sorted, particles to 0.5 mm diameter, friable	hydrocarbon odor PID (sample) - 120 PID (borehole) - 1.0	
				cuttings grade finer	hydrocarbon odor in cuttings	
10	B-1-10	6/7/8	16"	ML - sandy silt, greenish gray, 20-25% moderately well sorted sand to 0.5 mm diameter, trace clay, moist, friable, not plastic	hydrocarbon odor PID (sample) - 72	
				cuttings grade finer		
				CL - clay, olive gray (5Y 4/3), trace sand, trace silt, moist, moderate plasticity, firm		
15	B-1-15	7/4/5	18"	SW - gravelly sand, greenish gray, 25% gravel to 1 cm diameter, very moist, very poorly sorted	hydrocarbon odor PID (borehole) - 1.0	
				CL - clay, olive gray (5Y 4/3), 15-20% poorly sorted, medium sand, trace silt, moist, moderate plasticity, firm		
20	B-1-20	4/7/11	17"	CL/SC - sandy and silty clay, greenish gray, 30% silt, 20% sand, moist, low plasticity, firm, interbedded with clayey and silty sand, olive (5Y 4/4), moist, poorly sorted, particles to 2 mm diameter	moderate hydrocarbon odor PID (sample) - 34	
25	B-1-25	NA	18"	SC - sandy silt and clay, bluish gray, 30% silt, 30% poorly sorted sand, moist abundant plant rootlets SM - fine sand, olive gray (5Y 4/2), 20% silt, no clay, wet, moderately well sorted, soft	moderate hydrocarbon odor PID (sample) - 110	
30	B-1-30	NA	18"	SC - clayey sand, bluish gray, 30% clay, moist but wet at 31.5 feet, poorly sorted, particles to 3 mm diameter, abundant plant rootlets, friable	moderate hydrocarbon odor PID (sample) - 52	
				Total depth - 31.5 feet		
35						

PART 1

JOB NO. 7403			BORE HOLE NO. B-2
PROJECT Jasco Chemical Corp.		LOCATION Mountain View, CA	
DRILLING CONTRACTOR ASE Drilling		DRILLING EQUIPMENT '8" Hollow Stem Auger	
HYDROGEOLOGIST Scott Rice		DRILLER Chris	
DATE START/TIME 7/13/90 1115	DATE FINISH/TIME 7/13/90 1230	SURFACE ELEVATION	TOTAL DEPTH 31.5 feet
WELL CASING	SCREEN TYPE	LENGTH	SLOT

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
	B-2-3	7/9/14	10"	CL - sandy clay, 30-40% poorly sorted sand to 1 mm diameter, low plasticity, subangular, firm	no odor PID (sample) - 0.2	
				cuttings grade coarser		
5	B-2-5	6/7/8	18"	SC - clayey sand, olive gray (5Y 4/2), 40% clay, trace silt, moist, poorly sorted, subangular particles to 1 mm diameter, friable, abundant plant rootlets	no odor PID (sample) - 0.0	
10	B-2-10	7/8/10	18"	SC - clayey sand, olive (5Y 4/3), 30% clay, moist, poorly sorted, subrounded particles to 0.5 mm diameter, friable, zoned with blue-gray clay	no odor PID (sample) - 0.4	
15	B-2-15	10/10/7	18"	ML - sandy silt, dark yellowish brown (10Y 4/6), 30% poorly sorted sand to 0.5 mm diameter, moist, moderately plastic SW - gravelly sand, salt and pepper, <10% silt and clay, moist, subangular, very poorly sorted ML - sandy silt, dark yellowish brown (10Y 4/6), 30% poorly sorted sand to 0.5 mm diameter, moist, moderately plastic	no odor PID (sample) - 0.6	
20	B-2-20	4/7/10	17"	SM - silty sand, olive (5Y 4/3), 25% silt, trace clay, moist, poorly sorted, subangular particles to 1 mm diameter, friable, not plastic	no odor PID (sample) - 1.4	
25	B-2-25	8/16/13	18"	SM - sandy silt and silty sand, olive (5Y 4/4), 40-60% silt, 40-60% sand, very moist, low plasticity, soft, grades coarser to blue gray silty sand at 27.75 feet, 30% silt, trace clay, moist, very poorly sorted, particles to 2 mm diameter, friable	slight hydrocarbon odor PID (sample) - 0.8	
30	B-2-30	6/5/7	18"	SW - coarse sand and gravel, bluish gray, 20% silt clay, wet, very poorly sorted, subangular particles to 1 cm diameter, friable to loose	no odor PID (sample) - 0.0	
35				Total depth - 31.5 feet		

PART 1

JOB NO. 7403			BORE HOLE NO. B-3
PROJECT Jasco Chemical Corp.		LOCATION Mountain View, CA	
DRILLING CONTRACTOR ASE Drilling		DRILLING EQUIPMENT 8" Hollow Stem Auger	
HYDROGEOLOGIST Scott Rice		DRILLER Chris	
DATE START/TIME 7/13/90 1320	DATE FINISH/TIME 7/13/90 1500	SURFACE ELEVATION	TOTAL DEPTH 31.5 feet
WELL CASING	SCREEN TYPE	LENGTH	SLOT

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
	B-3-3	4/9/16	12"	SC - clayey sand and sandy clay, dark grayish brown (2.5Y 4/2), 40-60% sand, 40-60% silt, moist, very poorly sorted, particles to 2 mm diameter, not plastic, firm but friable	no odor PID (sample) - 0.0	
5	B-3-5	5/11/14	18"	SC - sandy and silty clay, dark grayish brown (2.5Y 4/2), 20-30% sand in lenses to 2 cm thick, 20% silt, poorly sorted, subrounded, low plasticity	no odor PID (sample) - 2.0	
10	B-3-10	7/9/14	18"	SC - clayey sand and sandy clay, dark grayish brown (2.5Y 4/2), 40-60% sand, 40-60% silt, moist, poorly sorted, not plastic, firm	no odor PID (sample) - 0.0	
15	B-3-15	9/9/4	18"	ML - silt and fine sand, dark grayish brown (2.5Y 4/2), grading coarser to 15.5 feet SW - coarse sand and gravel, <10% silt and clay, loose, very poorly sorted, subangular CL - sandy clay, 20% silt, moist, moderately plastic	no odor PID (sample) - 0.0	
20	B-3-20	9/15/21	18"	SM - silty sand, olive brown (2.5Y 4/4), 20% silt, moist, very poorly sorted, subrounded particles to 1 cm diameter, loose to friable	no odor PID (sample) - 0.0	
25	B-3-25	6/8/12	18"	SM - silty and clayey sand, dark grayish brown (2.5Y 4/2), 30% silt and clay, very moist, very poorly sorted, subrounded particles to 2 mm diameter, friable, not plastic, abundant iron oxidized plant rootlets diameter, friable	no odor PID (sample) - 0.0	
30	B-3-30	5/9/28	18"	SW - coarse sand and gravel, 15% silt and clay, saturated, very poorly sorted, subangular particles to 1 cm diameter, loose	insufficient sample for PID analysis	
35				Total depth - 31.5 feet		

PART 1

JOB NO. 7403		BORE HOLE NO. B-4
PROJECT Jasco Chemical Corp.	LOCATION Mountain View, CA	
DRILLING CONTRACTOR ASE Drilling	DRILLING EQUIPMENT 8" Hollow Stem Auger	
HYDROGEOLOGIST Scott Rice	DRILLER Chris	
DATE START/TIME 7/14/90 0800	DATE FINISH/TIME 7/14/90 0930	SURFACE ELEVATION	TOTAL DEPTH 31.5 feet
WELL CASING	SCREEN TYPE	LENGTH	SLOT

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
	B-4-3	3/6/14	2"	CL - sandy clay, black (5Y 2.5/1), 30% poorly sorted sand to 1 mm diameter, moist, moderately plastic, firm, abundant plant rootlets	no odor PID (sample) - 0.0	
5	B-4-5	5/7/8	12"	CL - sandy clay, very dark gray (5Y 3/1), 30% poorly sorted sand to 2 mm diameter, moist, subangular, not plastic, friable	no odor PID (sample) - 0.0	
10	B-4-10	5/9/16	18"	CL - sandy clay, very dark gray (5Y 3/1), 30% poorly sorted sand to 2 mm diameter, moist, subangular, not plastic, friable, mottled with coarse sand	no odor PID (sample) - 0.0	
				ML - silty fine sand, grayish brown (2.5Y 5/2), 20% silt, 30% medium to coarse sand, poorly sorted, particles to 4 mm diameter		
15	B-4-15	4/5/6	18"	SW - coarse sand and gravel, olive brown (2.5Y 4/4),10 10-15% gravel, 10-15% silt, moist, very poorly sorted, subrounded particles to 1 cm diameter	no odor PID (sample) - 0.0	
				ML - fine sandy silt and silty fine sand, olive brown (2.5Y 4/4), 15-20% medium to coarse sand, moist, low plasticity, firm, poorly sorted, particles to 3 mm diameter		
20	B-4-20	6/7/13	18"	SC - clayey sand, olive (5Y 5/3), 40% clay, moist, very poorly sorted, subrounded particles to 1 cm diameter, moderately firm, low plasticity, abundant plant rootlets, pockets of coarse sand	no odor PID (sample) - 0.2	
25	B-4-25	4/8/11	18"	SW - sand and gravel, 20% clay and silt, very poorly sorted, loose, particles to 1 cm diameter CL - sandy clay, dark gray (5Y 4/1), 25% sand, moist, firm, not plastic, particles to 2 mm diameter SM/SC - sandy silt and clay, bluish gray, 30% medium sand to 0.5 mm diameter, moist, low plasticity firm, abundant iron oxidized plant rootlets	no odor PID (sample) - 0.2	
30	B-4-30	7/8/7	18"	ML - sandy silt, dark olive gray (5Y 3/2), 30-40% medium sand, moist, low plasticity, subangular SW - coarse sand and gravel, bluish gray, 15% silt and clay, wet to saturated, very poorly sorted, subangular particles to 1 cm diameter, loose	no odor PID (sample) - 0.0	
35				Total depth 31.5 feet		

PART 1

PAGE 1 OF 1	
JOB NO. 7403	BORE HOLE NO. B-5
PROJECT Jasco Chemical Corp.	LOCATION Mountain View, CA
DRILLING CONTRACTOR ASE Drilling	DRILLING EQUIPMENT 8" Hollow Stem Auger
HYDROGEOLOGIST Scott Rice	DRILLER Chris
DATE START/TIME 7/14/90 1115	DATE FINISH/TIME 7/14/90 1300
SURFACE ELEVATION	TOTAL DEPTH 31.5 feet
WELL CASING	SCREEN TYPE
LENGTH	SLOT

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
	B-5-3	NA	11"	SC - clayey sand, dark grayish brown (2.5Y 4/2), 40% clay, moist, poorly sorted, subrounded particles to 1 mm diameter, firm, not plastic	no odor PID (sample) - 0.6	
5	B-5-5	4/6/9	15"	SC - sandy and silty clay, dark grayish brown (2.5Y 4/2), 30% fine to medium sand and silt, moderately plastic	no odor PID (sample) - 0.6	
10	B-5-10	6/8/7	15"	SC - clayey sand, olive gray (5Y 4/2), 20-25% clay, slightly moist, poorly sorted, subangular, particles to 2 mm diameter, not plastic, friable	no odor PID (sample) - 0.0	
				grades coarser to gravels up to 5 cm diameter		
15	B-5-15	9/9/9	18"	SW - coarse sand and gravel, dark brown (10YR 3/3), trace silt, moist, very poorly sorted, subrounded particles to 4 cm diameter, loose	no odor PID (sample) - 0.0	
				cuttings grade finer		
20	B-5-20	5/27/50	14"	SM - silty sand and gravel, dark grayish brown (2.5Y 4/2), 20% silt, 30% gravel to 1 cm diameter, moist, very poorly sorted, subrounded, friable, predominantly quartz gravels	no odor PID (sample) - 0.1	
25	B-5-25	3/4/6	18"	CL - sandy and silty clay, blue-grey, 20% sand, 30% silt, moist, moderate plasticity, firm, abundant decaying plant rootlets	no odor PID (sample) - 0.2	
30	B-5-30	6/20/16	18"	CL - sandy and silty clay, blue-gray, moist to wet, moderate plasticity	no odor PID (sample) - 0.8	
				SC - sandy clay, wet, 30% clay, 40% gravel to 2 cm diameter, poorly sorted, loose	groundwater encountered at 31.5 feet	
				Total depth - 31.5 feet		
35						

PART 1

JOB NO. 7403			BORE HOLE NO. V-11
PROJECT Jasco Chemical Corp		LOCATION Mountain View, CA	
DRILLING CONTRACTOR ASE Drilling		DRILLING EQUIPMENT Mobile B-61 Hollow Stem	
HYDROGEOLOGIST Scott Rice		DRILLER Chris	
DATE START/TIME 6/20/90 0900	DATE FINISH/TIME 6/20/90 1515	SURFACE ELEVATION	TOTAL DEPTH 41.5 feet
WELL CASING 4" Sched 40 PVC	SCREEN TYPE 4" Sched 40 PVC	LENGTH 10 feet	SLOT 0.010-inch

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS
				cuttings - sandy clay and clayey sand, dark gray, moist, low plasticity	PID (background) 2-4
	V11-2	4/5/11	13"	CL/SC - sandy clay and clayey sand, very dark gray (10YR 3/1), 40-60% sand, 40-60% clay, moist, poorly sorted, subangular, particles to 1 mm diameter, firm, low plasticity	PID (sample) - 3
5				CL/SC - as above	
	V11-5	3/5/8	14"	SM - silty sand, grayish brown (10YR 5/2), 30-40% silt, slightly moist, moderately well sorted, medium sand, particles to 2 mm diameter, friable	PID (sample) - 7 PID (borehole) - 0
10	V11-10	3/5/8	16"	SM/SC - clayey and silty sand, dark brown (10YR 3/3), 30% clay, 20% silt, 50% medium sand, moist, poorly sorted, subrounded, particles to 1 mm diameter, firm but friable, low plasticity	PID (sample) - 4
				cuttings - light gray gravel between 13 and 15 feet	
				ML - fine sandy silt, dark brown (10YR 4/3), moist, low plasticity	
15	V11-15	7/8/7	18"	SW - medium sand, dark brown to black, <10% clay and silt, slightly moist, poorly sorted, loose	PID (sample) - 3
				SM - silt and fine sand, olive brown (2.5Y 4/4), 40-60% silt, 40-60% fine sand, slightly moist, soft, not plastic	Driller notes softer sediments at 16 feet
				SW - sand and gravel, dark grayish brown (2.5Y 4/2), trace silt, dry, poorly sorted, friable	
20	V11-20	3/5/8	16"	SC - clayey sand, olive brown to black (2.5Y 4/4 to 2.5Y 3/0), 40% clay, slightly moist to moist, poorly sorted, particles to 4 mm diameter, lenses of hard clay, abundant decayed rootlets	PID (sample) - 2 PID (borehole) - 1
				SM - silty sand, olive (5Y 4/3), 40% silt, 10% clay, moist, poorly sorted, medium to coarse sand to 2 mm diameter, low plasticity	
25	V11-25	3/6/9	18"		PID (sample) - 1
				GM - silty sand and gravel, 20% silty, moist, very poorly sorted, subangular, friable	
30	V11-30	8/24/33	18"	CL - slightly sandy clay, dark olive gray (5Y 3/2), 10-15% fine to medium sand, moist, moderately plastic, firm	PID (sample) - 1
				GM - sand and gravel, 20% gravel, wet to saturated, very poorly sorted, subangular, particles to 10 mm diameter, loose, friable, zones of iron oxidation throughout	Driller notes difficult drilling at 32 feet, then easier drilling at 32.5 feet
35	V11-35	12/9/14	NA	GM - sand and gravel, 20-25% silty and clay, saturated, very poorly sorted	Sample collected for sieve analysis.

GRAPHIC LOG

XX
XX

PART 2

JOB NO. 7403		PAGE 2 OF 9 / BORE HOLE NO. V-11
PROJECT Jasco Chemical Corp	LOCATION Mountain View, CA	

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
				cuttings - sand and gravel		
40						
					Total Depth - 41.5 feet	
45						
50						
55						
60						
65						
70						
75						

PART 1

JOB NO. 7403	BORE HOLE NO. V-12
PROJECT Jasco Chemical Corp	LOCATION Mountain View, CA
DRILLING CONTRACTOR ASE Drilling	DRILLING EQUIPMENT Mobile B-61 Hollow Stem
HYDROGEOLOGIST Scott Rice	DRILLER Chris
DATE START/TIME 6/20/90 1555	DATE FINISH/TIME 6/21/90 1545
SURFACE ELEVATION	TOTAL DEPTH 42 feet
WELL CASING 4" Sched 40 PVC	SCREEN TYPE 4" Sched 40 PVC
LENGTH 10 feet	SLOT 0.010-inch

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
0					PID (background) - 0	
				cuttings - (ML) sandy silt, dark gray, 30% sand, slightly moist, firm		
				color change from dark gray to light tan		
5				cuttings - (SM) fine sand and silt, tan, 40% silt, <10% clay, well sorted, loose	PID (borehole) - 0	
10				cuttings - (CL) sandy clay, dark gray, 25% medium sand, slightly moist, firm but friable, low plasticity	Driller notes difficult drilling 10 to 12 feet	
				cuttings - (CL) sandy clay, light gray, 25% medium sand, slightly moist, firm but friable, low plasticity		
				cuttings - (GW) sand and gravel, < 20% clay and silt, poorly sorted, rounded		
15	V12-15	16/19/23	18"	SM - sandy silt and silty sand, dark brown (10YR 3/3), trace clay, slightly moist, hard	PID (sample) - 1	
				SW - sand and gravel, dark grayish brown (10YR 4/2), <10% clay and silt, slightly moist, very poorly sorted, subangular, particles to 10 mm diameter, loose	PID (background) - 1	
20	V12-20	NA	18"	SM - sandy silt and silty sand, dark brown (10YR 3/3), 20% clay, firm, moderate plasticity	PID (sample) - 1	
25	V12-25	3/5/8	18"	ML - sandy clay, dark grayish brown (2.5Y 4/2), moist, stiff, moderately plastic, sand replaces decaying rootlets, abundant iron oxidization	PID (sample) - 1	
30	V12-30	10/5/6	18"	SW - coarse sand, olive brown (2.5Y 4/4), trace silt, wet, very poorly sorted, subangular loose, grades finer to 20.75 feet	PID (sample) - 1	
				CL - clay, dark gray (2.5Y 4/0), trace sand in decayed rootlet zones, moist, stiff	First Water - 32 feet	
35	V11-35	12/9/14	NA		Sample collected for sieve analysis.	

PART 2

JOB NO. 7403

BORE HOLE NO. V-12

PROJECT Jasco Chemical Corp

LOCATION Mountain View, CA

BORE HOLE LOG

DEPTH	SAMPLE NUMBER	BLOW COUNT PER 6'	RECOVERY	LITHOLOGIC DESCRIPTION	REMARKS	GRAPHIC LOG
				cuttings - sand and gravel		
40						
					Total Depth - 41.5 feet	
45						
50						
55						
60						
65						
70						
75						

BORING LOG: V-1
LOCATION: 1710 Villa Street, Mountain View, California
ELEVATION: 62 feet (approximately) U.S.G.S. Datum
DATE & TIME DRILLED: May 24, 1984 (1500 to 1740 Hours)
WATER LEVEL: Free water encontered at 29 feet; at completion of drilling water level 24 feet below the ground surface.

DEPTH IN FEET	BLOWS/FOOT	DESCRIPTION
0 - 0.2		AC paving and base material
0.2 - 11		Grayish brown (5YR 3/2) silty clay (CL) medium stiff, damp. Some gravel at 8 feet.
11 - 12.5		Moderate brown (5YR 3/4) silty clay (CL) medium stiff, moist.
12.5 - 15		Medium gray (N 5) sandstone fragments (SP) angular, up to 1/2 inch dia.
15 - 20		Dark yellowish brown (10YR 4/2) silty clay (CL), stiff, moist.
15.5	50	Undisturbed soil sample. Grades gravelly and wet at 17 feet
20 - 25		Grayish olive (10Y 4/2) silty clay (CL) containing well preserved gastropods shells up to 0.3 inches long, stiff, damp.
20.5	37	Undisturbed soil sample.
25 - 35		Dark grayish green (5G 4/2) silty to sandy clay (CL to ML) with some peat and rock fragments, stiff, wet.
25.5	40	Undisturbed soil sample.
30.5	22	Undisturbed soil sample. Increase in rock fragments, up to 1 inch in dia., fragments appear to be composed of serpentine, soft, saturated.
35 - 50		Olive gray (5Y 3/2) silty to sandy clay (CL to ML) with occassional rock fragment, stiff, damp.
50.5	50 blows for 3"	Disturbed soil sample. Fine-grained sandy to silty gravel (SW), angular to subangular, up to 1/2 inch in dia. (average size 0.02"), loose, saturated.

BOTTOM OF BORING

Questa Engineering Corporation
Civil, Environmental & Agricultural Engineers

DRILL HOLE NUMBER VILLA #2

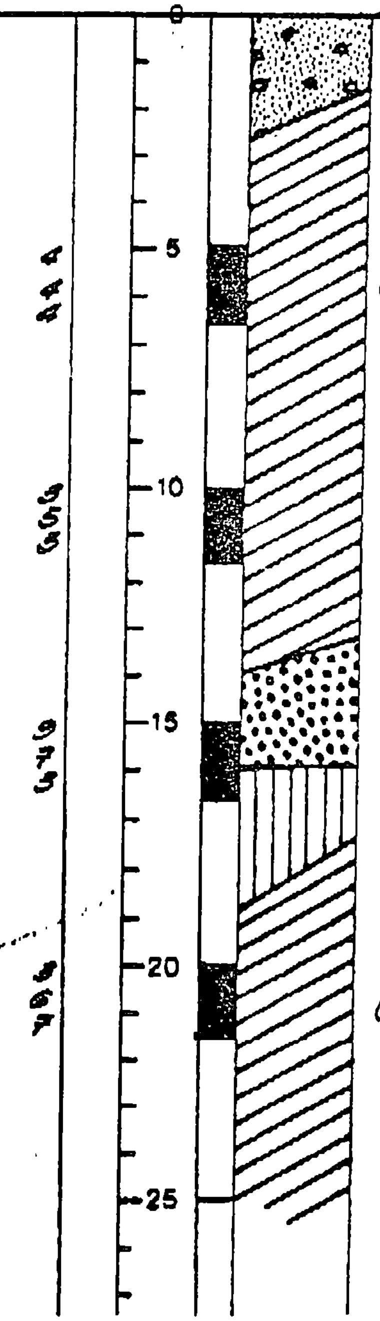
DATE DRILLED 8/22/86

WELL HEAD ELEVATION ________

DRILLING METHOD 8" HOLLOW STEM AUGER

WELL O.D. 2"

Moisture Content (%) | Dry Density | Blows / 6" | Groundwater Level | DEPTH (ft.) | Sample Interval | Graphic Log | CLASSIFICATION and Remarks



Fill

(CL) CLAY, Plastic, Med. Grey

(CL) Silty CLAY, As Above, Faint Chemical Odor

(CL) Silty CLAY, Olive Grey (5Y 5/2)

Gravelly

(SP) SAND & Fine GRAVEL, Faint Odor

(ML) Fine Sandy, Clayey SILT, Olive Grey

(CL) Silty CLAY, Olive Grey, Few Pores

logged by PNC

checked by ________

LOG of Drill Hole Number VILLA #2

at JASCO PAINT CO. Proj No. 8669

Fig 3

1 of 2

Questa Engineering Corporation
Civil, Environmental & Agricultural Engineers

DRILL HOLE NUMBER VILLA #2

DATE DRILLED 8/22/85

Moisture Content (%)	Dry Density	Blows / 6"	Groundwater Level	DEPTH (ft.)	Sample Interval	Graphic Log	CLASSIFICATION and Remarks
		3 4 8		25			(CL) Silty CLAY, with Trace Sand, Blue Grey, Few Roots, Few Pores
		3 4 7		30			(CL) Silty CLAY, Trace Fine Gravel, Olive Grey (5Y 3/1)
							(SP) SAND, Clean, Few Angular Gravel Clasts
		5 7 10		35		EOH	(CL) Silty CLAY, Gravelly

logged by PNC

checked by

LOG of Drill Hole Number VILLA #2

at JASCO PAINT CO. Proj No. 8669 2 of 2

Questa Engineering Corporation
Civil, Environmental & Agricultural Engineers

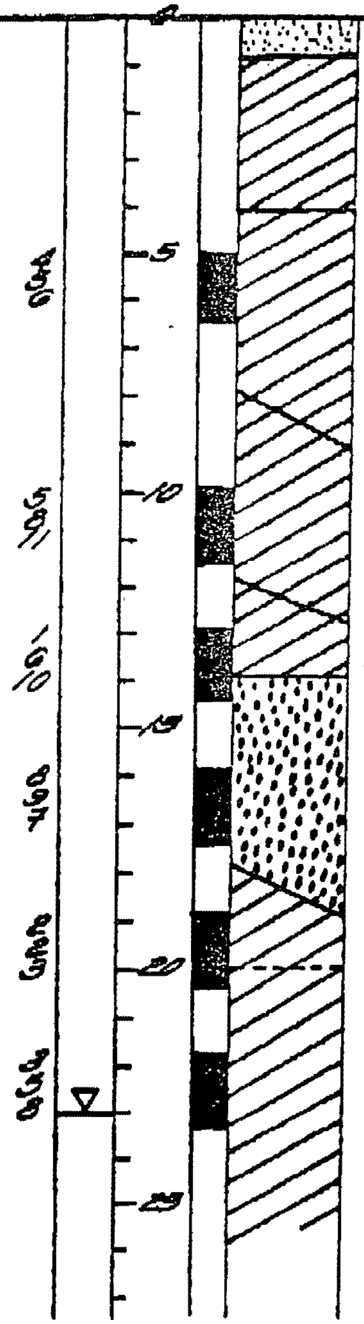
DRILL HOLE NUMBER V-3

DATE DRILLED 11-9-1985

DRILLING METHOD 10" HOLLOW STEM AUGER

WELL O.D. 5" DIA.

Moisture Content (%)	Dry Density	Blows / 6"	Groundwater Level	DEPTH (ft.)	Sample Interval	Graphic Log	CLASSIFICATION and Remarks



Sand Backfill Around Piping

(CL) Silty CLAY, Dark Brown, Dense

(CL) Silty CLAY, Olive Grey, Trace Gravel, No Odor

(CL) Silty CLAY, Reddish-Brown, Dense, No Odor, Few Small (< 5 mm) Rock Clasts.

(CL) CLAY, Med-Brown, Smooth, Plastic, Homogenious, Faint Mottles.

(SP) Silty SAND & Fine GRAVEL, Sub Rounded to Sub-Angular Clasts, Crude Grading, No Odor.

(CL) Silty, Sandy, CLAY with thin lenses of C. Sand & F. Gravel. Moisture on Clasts, V. Faint Odor?

(CL) Silty CLAY, Olive, Dense, Trace Gravel, Numerous Fine Roots.

— Grading to Olive/Blue

Figure 3

logged by PNC

checked by ______

LOG of Drill Hole Number V-3

at JASCO

Proj No. 8669 1 of 2

Questa Engineering Corporation
Civil, Environmental & Agricultural Engineers

DRILL HOLE NUMBER V-3

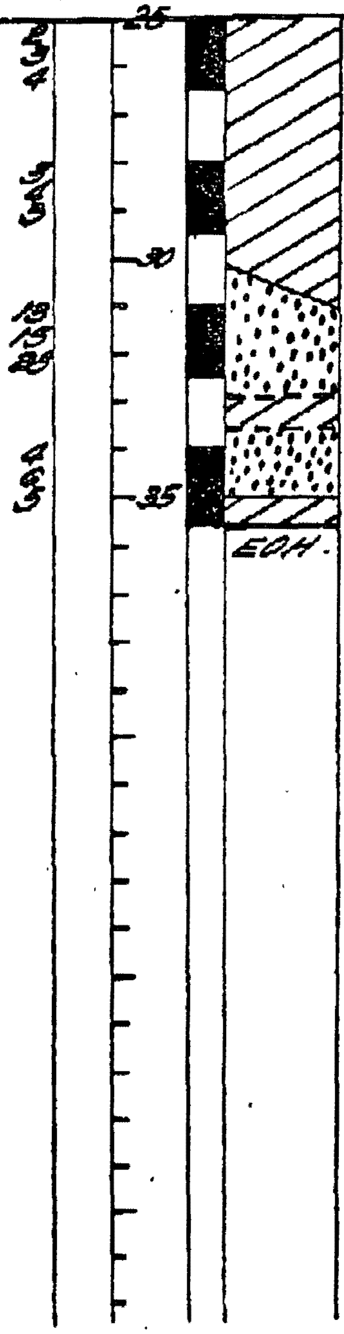
DATE DRILLED 11-5-1986

WELL HEAD ELEVATION ______

DRILLING METHOD 10" HOLLOW STEM AUGER

WELL O.D. 5" DIA.

Moisture Content (%)	Dry Density	Blows / 6"	Groundwater Level	DEPTH (ft.)	Sample Interval	Graphic Log	CLASSIFICATION and Remarks



(CL) Silty CLAY, Blue-Green, Smooth, Thin Sandy Lenses.

— Few Wood Chips & Rootlets Faint Odor.

(SP) SAND & Fine GRAVEL with Silty Clay Lenses, Odor.

— Clay Lens

Coarse SAND & Fine GRAVEL Lenses of Fine Sand.

(CL) CLAY, Blue Grey, Stiff.

logged by AWC

checked by ______

LOG of Drill Hole Number V-3

at JASCO

Proj No. 8669

BORING LOCATION JASCO CHEMICAL CORPORATION			GROUND EL.
DEPTH/ELEV. WATER ~23.5' 2-24	DRILL CONTRACTOR PC Exploration		TOTAL DEPTH 49.2
DRILL RIG Acker Soil/Max	BORING DIA. 8"	DATE DRILLED 2-24-88	LOGGED BY RGB/PS

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL-CH	ALLUVIUM 0.0-6.2 - SANDY CLAY: dark brown. 0-5% fine sand, occasional coarse sand clast, damp.	0				HA	Begin drilling on x-way at 925 AM after Health and Safety briefing. Drilling performed with tower down - Sampler pushed with rig hydraulic system.
		2	R-1	—	0.5 / 1.5	P	2.0-3.5' - 2.5" diam. California Modified Sampler (calmod) pushed using rig hydraulics
		4				HA	- drilling is slow due to drilling with tower down
			R-2	—	0.5 / 1.5	P	5.0-6.5 CALMOD
CL	6.2-13.0 SANDY CLAY: Mottled yellow brown/medium brown. Caliche veinlets; 10-15% fine sand. Low to moderate plasticity	6					
		8				HA	
		10	R-3	—	0.5 / 1.5	P	10.0-11.5' CALMOD
	11.4 - increase in sand content to 30%, color change to mottled light brown/yellow brown moderate plasticity	12					
CL-CH	13.0-15.0 - Sandy clay: dark [illegible]; occasional 3/4" [illegible] gravel clast; drilling tougher, ~5% fine sand, damp	14				HA	13' - drilling tougher, stiff clay with gravel fragments.
CL	15.0-31.5 - Sandy Gravelly Clay: yellow brown, 25% fine to medium sand, 20% fine gravel, 55% clay; low plasticity, slightly damp	16	R-4	—	0.5 / 1.5	P	15.0'-16.5' CALMOD
		18				HA	
		20					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG PROJECT NO. JCO-104H SHEET NO. 1 OF 3	BORING NO. V-8

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR/ROD	REC.	MODE	REMARKS
CL	15.0-31.5: Sandy Gravelly Clay (Continued)	20	R-5	—	0.5/1.5	P	20.0-21.5 CALMOD
		22				HA	23.0 - Drilling easier - Softer Material.
							▽ H2O 23.7' (10:00AM 2-25)
		24					25.0-26.5 CALMOD
		26	R-6	—	1.5/1.5	P	
	26.2 - Increase in Sand and Gravel Content to 10-15%. Increase in Moisture to moist Moderate plasticity; occasional wood fragments; slight mottling	28				HA	
		30	R-7	—	1.2/1.5	P	30.0-31.5 CALMOD
SC-CL	31.5-42.0: CLAYEY SAND/SANDY CLAY: Yellow brown; 50% medium Sand, 10% fine gravel, 40% Clay; moderate plasticity; dark; moisture increases with depth	32				HA	▽ 32.0 - H2O ENCOUNTERED
		34					35.0-36.5 CALMOD
		36	R-8		1.2/1.5	P	
	37.0 - Grading more clayey	38				HA	~37.0 - Drilling Action Goes Hard.
	40.0-41.0 very clayey	40					40.0-41.5 CAL MOD

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG		BORING NO.
PROJECT NO. JCO-104H	SHEET NO. 2 OF 2	V-3

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG / BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SC-CL	31.5-42.0 CLAYEY SAND/SANDY CLAY (cont.) ~41.5' [illegible] Sandy.	40	R-9		1.5/1.5	P	40.0-41.5 Cal mod. 200 [illegible]
SP	42.0-49.2' SAND [illegible] <10% fines [illegible] coarse [illegible], [illegible] (with [illegible]), coarse grains are rounded; no organics, hard; saturated	42					[illegible] 7:25 42.0 Drilling hard [illegible] difficulty [illegible] hollow stems open while [illegible] augers [illegible] time consuming
		44	R-1		[illegible]	[illegible]	44.0' Attempted to sample at 44. Unable to advance sampler (pushed with entire weight of rig). Shoe jammed [illegible] [illegible] gravely [illegible].
		46				HA	46.0' Drilling gets easier. Driller [illegible] clay or fine sand (No coarseness feeling)
		48					
	Bottom of hole 49.2'		R-2		[illegible]	[illegible]	49.0' Cal Mod. Again attempted to sample and was unable to advance sampler. Terminated boring at 49.2'. Began well construction.
		50					
		52					WELL CONSTRUCTION 0.0-32.0' Solid (2.0" sch 40 PVC pipe) 32.0-37.0' Slotted (0.020 Factory slots)
		54					SAND & SEAL 0.0-28.5' Grout 28.5-31.0' Bentonite 31.0-37.0' SAND (#3) 37.0-49.2' Bentonite
		56					
		58					
		60					

DATA ON THIS LOG ARE AN APPROXIMATION OF THE GEOLOGIC AND SUBSURFACE CONDITIONS BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT, DISCONTINUOUS, AND POSSIBLY DISTURBED SAMPLING NECESSITATED BY USE OF SMALL-DIAMETER HOLES. ROTARY AND WASH BORING HOLES HAVE FURTHER COMPLICATIONS IN THIS REGARD BECAUSE OF THE NEED TO USE DRILLING FLUID AND/OR CASING IN ADVANCING HOLES.

THIS LOG INDICATES CONDITIONS IN THIS HOLE ONLY ON THE DATE INDICATED AND MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND ON OTHER DATES. ANY WATER LEVELS SHOWN ARE SUBJECT TO VARIATION.

THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PROVIDE DATA PRIMARILY FOR DESIGN PURPOSES AND NOT NECESSARILY FOR THE PURPOSES OF SPECIFIC CONTRACTORS.

THE STRATIFICATION LINES OR DEPTH INTERVALS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES, AND THE TRANSITIONS MAY BE GRADUAL.

SOIL CLASSIFICATIONS SHOWN ON LOGS ARE FIELD CLASSIFICATIONS BASED ON THE UNIFIED SOILS CLASSIFICATION SYSTEM.

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. / SHEET NO. 3 OF 3	V-8

BORING LOCATION Jasco corner of Meridian & Prairie			GROUND EL.
DEPTH/~~ELEV~~ WATER ~21.0' 2-29-88	DRILL CONTRACTOR P.C. Exploration		TOTAL DEPTH 33.0
DRILL RIG Acker "Soil-max"	BORING DIA. 8.0"	DATE DRILLED 26 Feb 88	LOGGED BY G.F.Z.

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	ALLUVIUM 0.0-6.1 SANDY CLAY Black, ~60-70 % fines, high plastic; ~30-40 % sand, poorly graded, angular, slight organics, firm to stiff, damp ~2.9-3.1 clean sand 3.5' roots	0.0 2.0	R-1		1.5 / 1.5	HA P	Advancing hole with 8.0" hollow stem augers. Sampling with a 2.0" ID split spoon (SS) sampler. Advancing sampler by pushing with system hydraulics. Drilling with tower down. Mike Ybarra - Driller Mike - Helper Begin setup ~1:20, Drilling 2:15
	~5.0 [illegible] clean sand (fill)	4.0				HA	2.0-3.5 Pushed SS. 5.0-6.5 Pushed SS
CH	~6.1-13.0 CLAY Olive gray [illegible] with [illegible]; >90% fines, high plastic; <10% sand, fine-grained; some cementation; trace gravel; Fe staining; slight wht [illegible], stiff, damp	6.0 8.0	R-2		1.1 / 1.5	P HA	Drilling action is smooth and stiff
	~11.0 [illegible] in wht ppts; slight [illegible] ~12.5' hard	10.0	R-3		0.5 / 1.5	P	10.0-11.5 Pushed SS.
SW-CL	~13.0'-22.0 GRAVELLY SILTY SAND Lt olive gray to brownish, ~30 % fines, slightly plastic; ~65% sand, fine- to coarse-grained; mod. grading, angular to subrounded, hard, dry to damp. ~15.5-16 [illegible] clay (stiff?)	12.0 14.0 16.0	R-4		1.1 / 1.5	HA P	~13.0' Drilling action gets hard but still smooth ~14.0' cuttings get slightly gravelly 15.0-16.5 Pushed SS.
	~19.0-20.0 CLAYEY lens (dry [illegible])	18.0 20.0				HA	~18.5' Drilling gets super hard, bound augers tight and almost broke the gears. ~19.0 20.0-21.5 Pushed SS.

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. ICO104H / SHEET NO. 1 OF 2	V-9

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SW-CL	13.0-22.0 GRAVELLY SILTY SAND: (cont)	20.0	R-5		1.0/1.5	P	20.0-21.5 Pushed S.S. 4 30 2-26-88 21.5' 10 15 2-29-88
CL-SC	CLAYEY SAND - 22.0-28.0 SANDY CLAY: Mod. [illegible], ~40-60% fines, med. plastic, ~40-60% sand, [illegible] coarse-grained, med grading, rounded to angular, [illegible] small holes, [illegible], Fe staining, [illegible] fines; [illegible] soft to firm, wet. - [illegible] rounded fine gravel, [illegible] of coarser [illegible] material	22.0 / 24.0 / 26.0	R-6		1.5/1.5	HA / P	~22.0' Drilling [illegible] gets very easy. $\underline{\nabla}$ H_2O @ 21.5 after [illegible] compl. — H_2O ~24.0' after sampling at 22.0'. 25.0-26.5 Pushed S.S.
CL	28.0-33.0 CLAY: Bluish gray [illegible] Fe mottling, >90% fines, high plastic, <10% sand, fine-grained [illegible]), [illegible], [illegible] stiff, damp. 32.0-33.0 [illegible] slightly silty, slight increase in sand. Bottom hole 33.0'	28.0 / 30.0 / 32.0	R-7 / R-8		1.5/1.5 / 1.3/1.5	HA / P / P	~28.0' D[illegible] gets harder and smooth. 30.0-31.5 Pushed S.S. 31.5-33.0 Pushed S.S. Terminated boring at 33.0'. Began well installation
	DATA ON THIS LOG ARE AN APPROXIMATION OF THE GEOLOGIC AND SUBSURFACE CONDITIONS BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT, DISCONTINUOUS, AND POSSIBLY DISTURBED SAMPLING NECESSITATED BY USE OF SMALL-DIAMETER HOLES. ROTARY AND WASH BORING HOLES HAVE FURTHER COMPLICATIONS IN THIS REGARD BECAUSE OF THE NEED TO USE DRILLING FLUID AND/OR CASING IN ADVANCING HOLES. THIS LOG INDICATES CONDITIONS IN THIS HOLE ONLY ON THE DATE INDICATED AND MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND OR OTHER DATES. ANY WATER LEVELS SHOWN ARE SUBJECT TO VARIATION. THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PROVIDE DATA PRIMARILY FOR DESIGN PURPOSES AND NOT NECESSARILY FOR THE PURPOSES OF SPECIFIC CONTRACTORS. THE STRATIFICATION LINES OR DEPTH INTERVALS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES, AND THE TRANSITIONS MAY BE GRADUAL. SOIL CLASSIFICATIONS SHOWN ON LOGS ARE FIELD CLASSIFICATIONS BASED ON THE UNIFIED SOILS CLASSIFICATION SYSTEM	34.0 / 36.0 / 38.0					WELL CONSTRUCTION 0.0-23.0' Solid (2.0" Sch 40 PVC) 23.0-28.0 Slotted (0.020 Factory slots) SAND & SEAL 0.0 - 20.0 Grout 20.0-22.0 Bentonite 22.0-28.0 [illegible] 28.0-33.0 Bentonite

Wahler Associates	JACO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO 104 H / SHEET NO. 2 OF 2	V-9

BORING LOCATION Jasco, East side of main building			GROUND EL.
DEPTH/ELEV. WATER ~24.5' (5 March)	DRILL CONTRACTOR HEW DRILLING		TOTAL DEPTH 38.0
DRILL RIG CME 55	BORING DIA. 8.0"	DATE DRILLED 4 MAR. 88	LOGGED BY GJ L.

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
	FILL 0.0-0.4 ASPHALT	0.0					Advancing hole with 8.0" hollow-stem augers.
GC	0.4-1.2' SILTY SANDY GRAVEL: sub-base material, greenish-gray					HA	Sampling with a 2.5" ID split spoon (SS) sampler driven by a 140 lb rope line hammer, free-falling 30 in per blow.
CH	ALLUVIUM 1.2-4.8' CLAY: Black; >90% fines, high plastic, high toughness; <10% sand, fine-grained, slight w/d ppt; slight rootlets, very stiff to hard; damp	2.0	R-1	5 15 20	1.2 / 1.5	DR	Driller - Jeff Helper - John Rig arrived 1:00 Drilling 1:45
						HA	2.0-3.5 Drove S.S. 3.0-3.5 OVA=12
		4.0	R-2	8 20 22	1.0 / 1.5	DR	4.0-5.5 Drove S.S. 5.0-5.5 OVA=14
CL	~4.8-11.3 CLAY: Greenish brown with Fe mottling; >90% fines, med. to higher plastic, med. toughness, <10% sand, fine to med.-grained, slight w/d ppt, very stiff to stiff, damp to slightly moist. - slightly crumbly	6.0				HA	Regional Board observer on site. (Liz Cameron) 7.0-8.5
			R-3	7 16 22	1.5 / 1.5	DR	8.0-8.5 OVA=10
	~8.0' color to mostly brn, gray clay stringers, some cementing, slight increase in sand %.	8.0				HA	
	~10.5' grading sandy and gravelly.	10.0	R-4	5 12 22	1.0 / 1.5	DR	10.0-11.5 Drove S.S. 11.0-11.5 OVA=12
GC	11.3-18.5 CLAYEY SANDY GRAVEL: med. yel brn; ~20-40% fines; ~20-30% sand, fine to coarse-grained, sub-angular to rounded, well graded; ~40-60% gravel, fine, sub to rounded; Fe staining; dense to very dense; damp to slightly moist.	12.0				HA	~12.5' Drilling action gets hard and jumpy. 13.0-14.0 Drove S.S.
			R-5	17 30	0.9 / 1.0	DR	13.5-14.0 OVA=8
		14.0				HA	15.0-16.5 Drove S.S.
	16.0-16.5 clean sand, med. to fine grained	16.0	R-6	15 15 12	1.2 / 1.5	DR	16.0-16.5 OVA=3
		18.0				HA	~18.5' Drilling action gets easy
SC-CL	~18.5-32.5' SANDY CLAY/CLAYEY SAND: Med. yel brn; ~40-60% fines, med plastic, ~40-60% sand, fine to coarse-grained,	20.0					20.0-21.5 Drove S.S.

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO. JCO 104H

SHEET NO. 1 OF 2

BORING NO. V-10

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG .	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SC-CL	20.5-32.5 SANDY CLAY/CLAYEY SAND (cont.) subangular to subrounded, mod grading; slight fine gravel; Fe mottling; stiff to medium dense; damp to moist.	20.0	R-7	4 4 7	1.2 / 1.5	DR	20.0-21.5 Drove S.S. 21.0-21.5 OVA ≟ 3
		22.0				4A	SAND & SEAL 0.0-22.0 Grout 22.0-24.0 Bentonite 24.0-32.0 SAND (#3) 32.0-38.0 Bentonite
		24.0					▽ H_2O @ ~24.5' after well completed.
	~25.0-26.5 more sandy heavy Fe staining, very moist		R-8	7 10 14	1.3 / 1.5	DR	25.0-26.5 Drove S.S. 26.5 OVA = 2
		26.0					
		28.0				4A	H_2O to ~27.5' after sampling at 30'.
	~30' H_2O (saturated)	30.0	R-9	11 33 50	1.3 / 1.5	DR	30.0-31.5 Drove S.S. 31.0 OVA = 2
CH	32.5-38.0 CLAY. Red brn; >75% fines, high plastic, high toughness; <10% sand, fine-grained; Fe stain; stiff to very stiff; damp. ~35.0' sand with slight gravel	32.0				4A	~32.0' Drilling action gets smooth but hard. Driller thinks clay (Very good aquitard)
		34.0					
			R-10	8 [illegible] 21	1.2 / 1.5	DR	35.0-36.5 Drove S.S. 36.5' OVA = 4
	Bottom hole 38.0'	36.0	R-11	15 20 22	1.2 / 1.5	DR	36.5-38.0 Drove S.S. 38.0 OVA = 3 Terminated boring at 38.0', installed well.
		38.0					WELL CONSTRUCTION 0.0-25.0 Solid (2" PVC) 25.0-32.0 Slotted (0.020) SAND & SEAL - see above
		40.0					

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SOIL CLASSIFICATIONS SHOWN ON LOGS ARE FIELD CLASSIFICATIONS BASED ON THE UNIFIED SOILS CLASSIFICATION SYSTEM

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO 104 H — SHEET NO. 2 OF 2	V-10

Ernest Solomon
CEG # 350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION		GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING	TOTAL DEPTH 21.5'
DRILL RIG CME-75 / BORING DIA. 6"	DATE DRILLED 6-9-87	LOGGED BY RGR

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	ALLUVIUM 0.0-5.0: SANDY CLAY: dark brown, 80% clay, 20% sand, dry, moderate plasticity, very stiff.	0				AD	DRILL WITH 6" Auger
		2	R-1	7 7 10	1.5/1.5	DR	0.2.5-2.5" California modified sampler (CMS) driven by 140 lb Hammer falling 30"
	3.0 caliche mottling					AD	3.0-4.5 CMS
		4	R-2	7 15 20	1.5/1.5	DR	
SC	5.0-7.5 CLAYEY SAND: light brown, 60% medium sand, 40% clay, dry to slightly damp, low to moderate plasticity; very stiff.					AD	5.0-6.5 CMS
		6	R-3	7 10 14	1.5/1.5	DR	
CL	7.5-15.0 - CLAY; mottled yellow-brown/greenish brown; 95-98% clay 2-5% fine sand; very stiff, moist; high plasticity.	8				AD	
		10	R-4	8 12 17	1.5/1.5	DR	10.0-11.5 CMS
		12					
		14				AD	
SP	15.0-16.5 - GRAVELY SAND; medium brown; 80% medium sand, 20% gravel (subangular) medium size; dry to slightly damp.						15.0-16.5 CMS
		16	R-5	27 20 7	1.5/1.5	HA	
CL	16.5-20.2 - SANDY CLAY: yellow brown. 70% clay, 30% fine sand; moderate plasticity; damp;						
		18				AD	
		20					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO-104H	SHEET NO. 1 of 2	B-1

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG / BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	ALLUVIUM	20					20.0-21.5 CMS
SC	16.5-20.2- Sandy clay (cont.) 20.2-21.5 CLAYEY SAND: Light brown; 80% fine sand; 20% clay; Low plasticity; moist; dense.		R-6	7 16 24	1.5 / 1.5	DR	21.5 Terminate hole - Boring backfilled with cement grout
	21.5' Total Depth	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H / SHEET NO. 2 OF 2	B-1

Ernest Salomon
CEG #350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION			GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING		TOTAL DEPTH 21.5'
DRILL RIG CME-75	BORING DIA. 6"	DATE DRILLED 6-9-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
							Drill with 6" Auger
SC	ALLUVIUM 0.0-1.2- CLAYEY SAND: dark brown 65% Medium Sand, 35% Clay; Low to moderate plasticity; earthy odor, medium dense	0				AD	
			R-1	5 8 17	1.5/1.5	DR	1.0-2.5 2.5" California Modified Sampler (CMS) driven by 140 lb hammer fall 30"
CL	1.2-5.4- SANDY CLAY; dark brown 90% Clay, <10% fine sand; moderate plasticity; twig fragments. some iron staining; very stiff!	2				AD	3.0-4.5 CMS
		4	R-2	4 8 16	1.5/1.5	DR	
						AD	5.0-6.5 CMS
SC-CL	5.4-7.5- CLAYEY SAND-SANDY CLAY: light brown; 50% sand, fine, 50% fines, low plasticity; medium dense; damp, slight odor	6	R-3	7 12 14	1.5/1.5	DR	
CL	7.5-14.0- SANDY CLAY: light brown; 70% clay, 25% sand, 5% gravel; no odor; moderate plasticity; hard.	8				AD	
		10	R-4	9 13 20	1.5/1.5	DR	10.0-11.5 CMS
		12				AD	
SP	14.0-18.5 GRAVELLY SAND: light brown; [illegible] sand, 20% gravel, dry, very dense.	14					15.0-16.5 CMS
		16	R-5	22 27 27	1.5/1.5	DR	
		18				AD	
CL	18.5-21.5- SANDY CLAY; light brown; 85% clay, 15% fine sand; moderate plasticity; damp; hard.	20					

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO.	SHEET NO.	BORING NO.
JCO-104H	1 OF 2	B-2

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	ALLUVIUM 18.5-21.5 - Sandy Clay (Cont.)	20	R-6	7 13 23	1.5/1.5	DR	20.0-21.5 CMS 21.5 Terminate hole. boring backfilled with cement grout
	21.5 - Total Depth	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO-104H	SHEET NO. 2 OF 2	B-2

Ernest Solomon
CEG #350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION		GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING	TOTAL DEPTH 21.5'
DRILL RIG CME-75 / BORING DIA. 6"	DATE DRILLED 5-5-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	CODE	REMARKS
							DRILL WITH 6" AUGE
CL	ALLUVIUM 0.0-0.8-SANDY CLAY: Light brown, 60% clay, 40% medium sand; Low to moderate plasticity; dry; very stiff	0				AD	
CL	0.8-10.0-SANDY CLAY: dark brown 90% clay; 10% fine sand; moderate plasticity; moist; organic odor; rootlets present; very stiff 3.5-color change to mottled yellow brown/medium brown; Caliche veinlets 5.4-increase in sand content to 35-40%	2	R-1	3 8 12	1.5/1.5	DR	1.0-2.5 - 2.5" California Modified Sampler driven by 140lb hammer falling 30"
						AD	
		4	R-2	7 13 19	1.5/1.5	DR	3.0-4.5 CMS
						AD	
		6	R-3	7 7 12	1.5/1.5	DR	5.0-6.5 CMS
		8				AD	
SC	10.0-14.0-CLAYEY SAND: Light brown, 75% medium sand, 25% clay; Low to moderate plasticity; damp; dense	10	R-4	7 10 12	1.5/1.5	DR	10.0-11.5 CMS
		12				AD	
SP	14.0-18.0 GRAVELLY SAND: yellow brown; 75% sand, 20% gravel <5% clay; dry; dense	14					
		16	R-5	17 25 13	1.5/1.5	DR	15.0-16.5 CMS
						AD	
SC-CL	18.0-21.5-SANDY CLAY-CLAYEY SAND: Lt brown; 50% medium sand, 50% clay; moderate plasticity; moist, very stiff.	18					
		20					

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO. 520-194H

SHEET NO. 1 of 2

BORING NO. B-3

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
	ALLUVIUM						
CL	18.0-21.5 - SANDY CLAY (CONT.)	20	R-6	6 9 19	1.5/1.5	DR	20.0-21.5 CMS 21.5 Terminate hole. boring backfilled with cement grout
	21.5 Total Depth	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H — SHEET NO. 2 OF 2	B-3

CIEG #350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION			GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING		TOTAL DEPTH 21.5'
DRILL RIG CME-75	BORING DIA. 6"	DATE DRILLED 6-9-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
							DRILL WITH 6" AUGER
CL	ALLUVIUM 0.0-9.0 - SANDY CLAY: dark brown, 80% Clay, 20% sand, moderate plasticity; dry; Hard.	0				AD	
			R-1	7 12 21	1.5/1.5	DR	1.0-2.5 2.5" California Modified Sampler (CMS) driven by 140 lb hammer falling 30"
		2				AD	
			R-2	6 9 15	1.5/1.5	DR	3.0-4.5 CMS
		4				AD	
	5.0- decrease in sand content to 5-10%		R-3	8 9 17	1.5/1.5	DR	5.0-6.5 CMS
		6					
		8				AD	
SP	9.0-18.0- GRAVELY SAND: Light brown; 80% sand, 20% gravel, gravel clasts up to 1" long; dry; dense.						
		10	R-4	10 16 22	1.5/1.5	DR	10.0-11.5 CMS
		12				AD	
		14					
			R-5	18 15 10	1.5/1.5	DR	15.0-16.5 CMS
		16					
CL	18.0-21.5 - SANDY CLAY: medium brown; 80% clay; 20% fine sand, moderate plasticity; damp; very stiff.	18				AD	
		20					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H — SHEET NO. 1 OF 2	B-4

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	ALLUVIUM						
CL	18.0-21.5 - SANDY CLAY (CONT.)	20	R-6	9 12 19	1.5/1.5	DR	20.0-21.5 CMS 21.5 Terminate hole. boring backfilled with cement grout
	21.5 - TOTAL DEPTH	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG PROJECT NO. JCO-104 1A	SHEET NO. 2 OF 2	BORING NO. B-4

Ernest Solomon
CEG # 350 7/2/87

BORING LOCATION: JASCO CHEMICAL CORPORATION | GROUND EL.:
DEPTH/ELEV. WATER: NOT ENCOUNTERED | DRILL CONTRACTOR: HEW DRILLING | TOTAL DEPTH: 21.5
DRILL RIG: CME-45 | BORING DIA.: 6" | DATE DRILLED: 6-10-87 | LOGGED BY: RGC

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR/RQD	REC.	MODE	REMARKS
							DRILL WITH 5" AUGER
SP	FILL 0.0-0.8 - SAND: Light brown, medium, dry, loose.	0				AD	
CH	ALLUVIUM 0.8-5.8 - SANDY CLAY: dark brown; 95% clay, <5% sand; moderate plasticity; damp; stiff.		R-1		1.5/1.5	P	1.0-2.5 2.5" California Modified Sampler (CMS)
		2				AD	
	3.0 - Color change to medium brown		R-2		1.5/1.5	P	3.0-4.5 CMS
		4				AD	
CL	5.8-15.2 - SANDY CLAY: medium brown; 60% clay; 40% sand, fine; moderate plasticity; moist; firm; slight odor	6	R-3		1.5/1.5	P	5.0-6.5 CMS
		8				AD	
	10.5 - decrease in sand content to 25%	10	R-4		1.5/1.5	P	10.0-11.5 CMS
		12				AD	
		14					
SP	15.2-17.0 - GRAVELLY SAND: medium brown; 85% sand, 15% gravel, dry, loose.	16	R-5		1.5/1.5	P	15.0-16.5 CMS
SC-CL	17.0-21.5 CLAYEY SAND - SANDY CLAY: Med. brown; 50% fine sand; 50% clay; soft, moderate to low plasticity	18				AD	
		20					

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO.: JCO-104H | SHEET NO.: 1 OF 2 | BORING NO.: B-6

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG	BORING DIA. / DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	ALLUVIUM 17.0-21.5 Clayey Sand (Cont.)	20					20.0-21.5 CMS
CL			B-6		1.5/1.5	P	21.5 Terminate hole. boring backfilled with cement grout
	21.5 TOTAL DEPTH	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

DATA ON THIS LOG ARE AN APPROXIMATION OF THE GEOLOGIC AND SUBSURFACE CONDITIONS BECAUSE THE INFORMATION WAS OBTAINED FROM INDIRECT, DISCONTINUOUS, AND POSSIBLY DISTURBED SAMPLING NECESSITATED BY USE OF SMALL-DIAMETER HOLES. ROTARY AND WASH BORING HOLES HAVE FURTHER COMPLICATIONS IN THIS REGARD BECAUSE OF THE NEED TO USE DRILLING FLUID AND/OR CASING IN ADVANCING HOLES.

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THIS HOLE WAS LOGGED IN SUCH A WAY AS TO PROVIDE DATA PRIMARILY FOR DESIGN PURPOSES AND NOT NECESSARILY FOR THE PURPOSES OF SPECIFIC CONTRACTORS

THE STRATIFICATION LINES OR DEPTH INTERVALS REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN MATERIAL TYPES, AND THE TRANSITIONS MAY BE GRADUAL

SOIL CLASSIFICATIONS SHOWN ON LOGS ARE FIELD CLASSIFICATIONS BASED ON THE UNIFIED SOILS CLASSIFICATION SYSTEM

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H / SHEET NO. 2 OF 2	B-6

Ernest Solomon
CEG# 350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION		GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING	TOTAL DEPTH 21.5'
DRILL RIG CME-115	BORING DIA. 6" / DATE DRILLED 6-10-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
							DRILL WITH 6" AUGER
SP	FILL 0.0-0.5 - SAND: light brown, medium, dry, loose	0				AD	
CH	ALLUVIUM 0.5-4.5 - CLAY: dark brown, 95% clay, <5% sand, moderate to high plasticity, damp, stiff.		R-1		1.5/1.5	P	1.0-2.5 2.5" California Modified Sampler (CMS)
		2				AD	3.0-4.5 CMS
		4	R-2		1.5/1.5	P	
CL	4.5-14.0 - SANDY CLAY: blue green, 70% clay, 30% fine sand, moderate plasticity, strong chemical odor, damp, firm					AD	5.0-6.5 CMS
		6	R-3		1.5/1.5	P	
		8				AD	
	10.5 - color change to mottled blue-green/brown, caliche veinlets	10	R-4		1.5/1.5	P	10.0-11.5 CMS
		12				AD	
SP	14.0-20.5 - GRAVELLY SAND: medium brown, 80% sand, 20% gravel, <5% clay; loose, dry, odor present	14					15.0-16.5 CMS
		16	R-5		1.5/1.5	P	
		18				AD	
		20					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H / SHEET NO. 1 OF 2	B-5

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SP	14.0-20.5 ALLUVIUM GRAVELY SAND (CONT)	20					20.0-21.5 CMS
SC	20.5-21.5- Gravely clayey Sand medium brown; 60% sand, 20% gravel, 20% clay;		R-6		1.5/1.5	P	21.5 Terminate hole; boring backfilled with cement grout
	21.5 - TOTAL DEPTH	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO-104H	SHEET NO. 2 of 2	B-5

[illegible signature]
CEG #350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION		GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING	TOTAL DEPTH 21.5'
DRILL RIG CME-55 · BORING DIA. 6"	DATE DRILLED 6-10-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
	[illegible]	0				AD	DRILL WITH 8" AUGER
CL	0.0–3.5 – SANDY CLAY: dark brown; 80% [illegible]; 20% fine sand; low to moderate plasticity; damp; stiff.		R-1		1.5/1.5	P	1.0-2.5 2.5" California Modified Sampler (CMS)
		2				AD	
CL	3.5–10.5 – Sandy Clay: Mottled olive-green/medium brown; 70% fines; 30% fine sand; low to moderate plasticity; damp; stiff	4	R-2		1.5/1.5	P	3.0-4.5 CMS
						AD	
	5.5 – Color change to medium brown; sand content decreases to [illegible]	6	R-3		1.5/1.5	P	5.0-6.5 CMS
		8				AD	
SC	10.5–16.8 – GRAVELLY CLAYEY SAND: mottled medium brown/yellow brown; 55% medium sand; 20% gravel; 25% fines; damp; loose	10	R-4		1.5/1.5	P	10.0-11.5 CMS
		12				AD	
		14					
			R-5		0.7/1.5	P	15.0-16.5 CMS
CL	16.8–21.5 – SANDY CLAY: light brown; 60-70% fines; 30-40% fine to medium sand; soft to firm; moderate plasticity	16					
		18				AD	
		20					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO-104H	SHEET NO. 1 OF 2	B-7

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	ALLUVIUM 15.8-21.5 - SANDY CLAY (Cont.)	20	R-6		1.5 / 1.5	P	20-21.5 CMS 21.5 Terminate hole boring backfilled with cement grout
	21.5 - TOTAL DEPTH	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104H — SHEET NO. 2 OF 2	B-7

Ernest Solomon
CEG # 350 7/2/87

BORING LOCATION JASCO CHEMICAL CORPORATION			GROUND EL.
DEPTH/ELEV. WATER NOT ENCOUNTERED	DRILL CONTRACTOR HEW DRILLING		TOTAL DEPTH 21.5
DRILL RIG CME-45	BORING DIA. 6"	DATE DRILLED 6-10-87	LOGGED BY RGB

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
							DRILL WITH 6" AUGER
EX	0.0-0.5: EXCAVATION	0				AD	
OR	0.5-1.5: ORGANIC RESIDUE; white, crystalline; gelatinous highly odorous, soft						
	ALLUVIUM		R-1		0.6/1.5	P	1.0-2.5 2.5" California Modified Sampler (CMS)
CL	1.5-13.5 - SANDY CLAY: dark brown; 60% clay, 40% sand, Low to moderate plasticity; extremely odorous with organic vapors;	2				AD	
			R-2		1.5/1.5	P	3.0-4.5 CMS
		4				AD	
			R-3		1.5/1.5	P	5.0-6.5 CMS
		6					
		8				AD	
	10.0 - moderate plasticity; extremely odorous; caliche veinlets.	10	R-4		1.5/1.5	P	10.0-11.5 CMS
		12				AD	
SP	13.5-16.5 - GRAVELY SAND: greenish black to blue green; 70% medium sand; 30% gravel; moist, loose, highly odorous.	14					
			R-5		1.5/1.5	P	15.0-16.5 CMS
CL-SC	16.5-21.5 - SANDY CLAY-CLAYEY SAND: greenish black 50% clay, 50% fine sand, Low to moderate plasticity; odorous	16					
		18				AD	
		20					

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO. JCO-04A

SHEET NO. 1 OF 2

BORING NO. B-8

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG	BORING DIA. / DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / ROD	REC.	MODE	REMARKS
CL/SC	ALLUVIUM 16.5-21.5- Sandy Clay/Clayey Sand (cont.)	20	R-6		1.5/1.5	P	20.0-21.5 CMS 21.5 Terminate hole. boring backfilled with cement grout
	21.5 - TOTAL DEPTH	22					
		24					
		26					
		28					
		30					
		32					
		34					
		36					
		38					
		40					

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO-104-+ / SHEET NO. 2 OF 2	B-8

BORING LOCATION	JASCO CHEMICAL CORP. (In median of Central Exp.		GROUND EL.	
DEPTH/ELEV. WATER	23.5' (8-11-87)	DRILL CONTRACTOR HEW Drilling	TOTAL DEPTH	48.0
DRILL RIG CME 75	BORING DIA. 8.0"	DATE DRILLED 11 AUG 87	LOGGED BY	[illegible]

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	0.0-1.0' SANDY CLAY: Top soil, Blackish brown (5YR 2/1); some gravel; slight organics.	0.0				HA	Casto - Driller 9:20 Anibal - Helper Advancing hole with 8.0" hollow stem augers; Sampling with a 3.0" continuous core sampler, lined with clear plastic tubes (3.0" x 2.5') (samples termed T-1, T-2, etc.).
SP-SM	1.0-3.4' GRAVELLY SAND: Dk. yel. brn. (10YR 4/2), ~10% fines, nonplastic; ~60% sand, fine to coarse-grained, mod. grading, angular; ~30% fine gravel, angular; med. dense to dense; damp. (probable road base)	2.0	T-1		1.6 / 3.0		0.0-3.0 Run #1
CL	3.4-11.0' SANDY CLAY: olive Blk. (5Y 2/1); ~90% fines, med to high plastic, no dilatancy, med to high toughness; ~10% sand, fine-grained, rounded; abundant caliche (heavy rxn to HCl), damp.	4.0	T-2		2.5 / 2.5		3.0-8.0 Run #2
		6.0	T-3		2.5 / 2.5		~7.0' slight auger grinding
	~6.0-7.5 slight brn color	8.0	T-4		2.5 / 2.5		9:51 8.0' 8.0-13.0 Run #3
		10.0					
CL	11.0-20.6' SANDY CLAY: Lt. olive gray (5Y 5/2), ~70-80% fines, med plastic, slight dilatancy, slight to med toughness; ~20-30% sand, fine to coarse-grained (mostly fine with rounded coarse), sub angular to rounded; some Fe staining and coatings; no cement; no odor; damp.	12.0	T-5		2.5 / 2.5		10:04 13.0'
		14.0	T-6		2.5 / 2.5		13.0-18.0 Run #4
	15.8-17.2' more clayey, less sand.	16.0	T-7		2.5 / 2.5		18.0 10:30
CL	17.8-18.7' gravelly clay	18.0	T-8		1.0 / 1.0		18.0-21.5 Run #5
CL		20.0	T-9		2.5 / 2.5		[signature] CEG #350

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO 104 H / SHEET NO. 1 OF 3	I-2

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG	BORING DIA. / DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	11.0 - 20.6 SANDY CLAY: (cont.)	20.0	T-9 (cont)		2.5/2.5	HA	
CL	20.6 - 24.2 GRAVELLY SAND:						~21.0 augers grinding
SP	Dusky yel. brn (10YR 2/2); ~5% fines; ~75% sand, fine-to coarse-grained, poorly to mod. grading (lenses of very poorly graded), subrounded; Fe staining; saturated.	22.0	T-10		1.5/1.5		21.5 - 23.0 Run # 6 22.5 ground water while drilling 23.0 - 28.0 Run # 7 23.5 standing H_2O when augers removed
	24.2 - 25.5 clay lens	24.0	T-11		2.5/2.5		
CL	25.5 - 29.5 SILTY SAND:						25.5
SM	Dusky yel brn (10YR 2/2); ~30% fines, non plastic; ~70% sand, fine-grained, poorly graded, (occational rounded gravel), no odor; saturated. - some thin (~0.1-0.05) lenses of clay.	26.0	No sample		0.0/2.5		sampler blocked off at 25.5 and assumed sand from 25.5 - 28.0 but not recovered.
		28.0	T-12		2.5/2.5		11:00 28.0 11:10 28.0 - 33.0 Run # 8 25.5 - Drilling very soft
SM	29.5 - 35.3 SILTY SAND/ GRAVELLY SILTY SAND: Dusky yel brn (10YR 2/2); ~20% fines, non plastic; ~60-80% sand, fine-to coarse-grained, med grading, subrounded, sub angular; ~0-20% gravel; abundand Fe staining and coatings; wet, (Gravel is confined to lenses)	30.0 32.0	T-13		2.5/2.5		
		34.0	T-14		2.5/2.5		33.0 11:27 33.0 - 38.0 Run # 9
CL	35.3 - 42.5 SANDY CLAY: Dk. greenish gray (5G 4/1); ~60-80% fines, med. plastic (some zones of high plastic), slow dilatancy, med. toughness, ~20-40% sand, fine-to medium-grained (some angular coarse frags); no cement; low perviousness; wet.	36.0	T-15		2.5/2.5		
	35.7 - 37.2 zone of gradation from above material	38.0 40.0	T-16		2.5/2.5		11:31 38.0 38.0 - 43.0 Run # 10

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG		BORING NO.
PROJECT NO. JCO 104H	SHEET NO. 2 OF 3	I - 2

BORING LOCATION			GROUND EL.
DEPTH/ELEV WATER		DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	35.3 - 42.5 SANDY CLAY: (cont.) 38.0 - 39.5 more sandy; 38.0 - 38.5 sand lens; 40.9 - 42.5' ~95% clay	40.0	T-16 (cont)		2.5/2.5	HA	
		42.0	T-17		2.5/2.5		11:55
CL / CH / CL	42.5 - 47.0' SANDY CLAY: Dk. yel. brn (10YR 4/2); ~80-90% fines, med to high plastic, slow dilatancy to none, med to higher toughness; ~10-20% fine- to medium-grained sand (occasional coarse), poorly graded, rounded, Fe coatings + stains; no odor; slight rxn. to HCL, low to non pervious, stiff, wet. 43.0 - 43.3 possible stiff. 43.3 - 44.7' clay, very slight sand; 44.7 - 47.0 sandy clay with slight gravel	44.0	T-18		2.5/2.5		43.0 1:00 43.0-48.0 Run #1; 0.0 - 46.0 cutting coming up clean (no slop)
		46.0	T-19		2.5/2.5		~46.0' water coming up with cuttings. (slop)
SC / SP	47.0 - 48.0' CLAYEY SAND: Dk yel. brn with red staining; as above with ~60% sand and 40% fines; 47.7 - 48.0 sand with no fines	48.0					48.0' Terminated drilling.

Bottom Hole 48.0'

Following termination, Tremie grout to boring, filled hole with grout to surface.

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG — PROJECT NO. JCO104H — SHEET NO. 3 OF 3	BORING NO. I-2

BORING LOCATION JASCO CHEMICAL CORP. / In Central Expressway Median			GROUND EL.
DEPTH/~~ELEV.~~ WATER 23.67 / 0.95 stick-up	DRILL CONTRACTOR WEEKS DRILLING		TOTAL DEPTH 59.5
DRILL RIG FAILING 1500	BORING DIA. ~14.0"	DATE DRILLED 14 AUG. '87	LOGGED BY P.F.L

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	0.0 - ~2.5' GRAVELLY CLAY	0.0	B-3			RD	Arrived on site 7:00. Set-up rig & equip. Begin Drilling 9:30. Doug - Driller. Richard - Helper. Jim - Helper. Drilling with mud rotary, 13½" tri-cone bit.
		2.0					
Cl	~2.5 - 11.0 SANDY CLAY Grayish						
		4.0					Boring is 70" at 170° from Well V-7.
		6.0					
		8.0					8.0' 10:00 AM
		10.0					
		12.0	B-2				
	~11.0 - 20.0 SANDY CLAY						13.0' 10:17
Cl		14.0					
			B-3				
		16.0					
		18.0					
			B-4				Ernest Solomon CEG #350
	~20.0 - 24.0 SAND	20.0					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO 104 H	SHEET NO. 1 OF 3	I-2A

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
	20.0-24.0 SAND	20.0				RD	
SP							
		22.0	B-5				
		24.0					24.0 11:00
		26.0	B-6				
	27.0-47.0 - CLAYEY SAND						
SC		28.0					
			B-7				
		30.0					Drilled to 40.0'. Installed 8.0" steel casing to 40.0' and pushed to 42.0'.
		32.0					Installed grout pipe to 38' and pumped hole full of grout.
			B-8				(used 18 bags cement & ~200 gals H_2O) 2:40pm
		34.0					
		36.0					
			B-9				Note: Arrived Monday (17 Aug.) and casing was still full of H_2O, meaning that the seal was good.
		38.0					
			B-10				
		40.0					12:10

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO. JCO-104H

SHEET NO. 2 OF 3

BORING NO. I-2A

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SC	24.0 - 47.0 - Clayey Sand (cont.)	40.0				RD	Arrived on site ~10:3AM (17 Aug '87) Start drilling 12:25pm. Now drilling with 7½ tri-cone bit. Sampling with 30" split spoon sampler line with 2.5"x6.0" brass tubes (samples termed R-1, R-2, etc.).
		42.0	R-1	6	1.5 / 2.0	DR	Sampler is driven by a 140 lb. slide hammer, free falling 30.0" per blow.
			R-2	10			
			R-3	19			
			R-4	33			
		44.0	R-5	8	1.6 / 2.0	DR	42.0 - 44.0 Drove sampler
			R-6	10			
			R-7	9			* R-1 - no recovery (slit) not saved
			R-8	12.			
		46.0	B-1			RD	44.0 - 46.0 Driller screwed up - should not have sampled
			B-2				
SM-SW	47.0 - 54.5 SILTY GRAVELLY SAND Dk yel. brn (10YR4/2); ~10% fines, non plastic; ~60% sand, fine- to coarse-grained, mod to well graded, subrounded to subangular, ~30% gravel, fine-grained, angular; heavy Fe. coatings and staining; no odor; med. to high perviousness; dense to very dense; saturated		R-9	24	1.1 / 1.5	DR	47.0 - 48.5 Drove sampler
		48.0	R-10	39			Note: Gravel will drilling from 46.5 - 47.0'.
			R-11	80			48.5' sampler refusal
						RD	* note. R-9 not saved
		50.0	B-3				WELL CONSTRUCTION 2.0" ID PVC 0.0 - 49.0 solid 49.0 - 54.5 slotted (0.010) Install locking well cover
		52.0					SEAL 0.0 - 45.0 grout 45.0 - 47.0 Bentonite 47.0 - 54.5 Sand (#3) 54.5 - 59.5 Bentonite
		54.0					
CL-CH	54.5 - 59.5 SANDY CLAY: Med. blue gray (5B5/1); ~90% fines, highly plastic, high toughness; ~10% sand, fine- to med.-grained (mostly fine); heavy rxn to HCl; non pervious; slight organics (root like brown spots), no odor; hard; damp.		R-12	20	2.0 / 2.0	DR	55.0 - 57.0 Drove sampler
		56.0	R-13	34			* grout seal pumped 18 Aug 8:30AM
			R-14	44			
			R-15	40			
	59.0' slight increase in sand.	58.0	B-4			RD	Terminated boring at 59.5'
	Bottom Hole 59.5						2:15 water truck left 59.5' 4:15 Water truck return
		60.0					

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SOIL CLASSIFICATIONS SHOWN ON LOGS ARE FIELD CLASSIFICATIONS BASED ON THE UNIFIED SOILS CLASSIFICATION SYSTEM

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG		BORING NO.
PROJECT NO.	SHEET NO.	
JCO 104H	3 OF 3	I-2A

BORING LOCATION JASCO CHEMICAL CORP., CENTRAL EXP. MEDIAN			GROUND EL.
DEPTH/ELEV. WATER 24.0' (standing)	DRILL CONTRACTOR HEW Drilling		TOTAL DEPTH 33.5
DRILL RIG CME 75	BORING DIA. 8.0"	DATE DRILLED 12 AUG '87	LOGGED BY P.J.Q.

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	0.0 - 1.0' SANDY CLAY: Brownish black; Topsoil; mod. organics, worms; wood; etc	0.0	T-1		0.5 / 1.0	4A	Casto - Driller 8:30 Sal - Helper Boring is advanced using 8.0" hollow stem augers.
CL	1.0 - 5.3' SANDY CLAY: Brownish black (5YR 2/1); ~85% fines, high plastic, no dilatancy, high toughness; ~15% sand, fine-to coarse-grained, poorly graded (mostly fine), rounded to subangular; abundant carbonate ppt., slight roots; non pervious; damp.	2.0	T-2		2.5 / 2.5		Sampling is done by a CME Continous Core Sampler with 3.0"x2.5' clear plastic liners. (T)
		4.0	T-3		2.3 / 2.5		0.0 - 3.5 Run # 1 3.5 - 8.5 Run # 2
CH	4.2 - 4.6 zone of heavy wht. ppt 4.6 - 5.3 gradation zone 5.3 - 12.1' CLAY. Mod. to dark yel br. (10YR 5/4 & 4/2); >95% fines, high plastic, high toughness; <5% sand, fine-grained; mod. rxn. to HCL; Fe staining (mottling); no odor, damp. (sporatic wht. ppt throughout)	6.0	T-4		2.5 / 2.5		
		8.0					9:04 8.5 8.5 - 13.5 Run # 3
		10.0	T-5		2.5 / 2.5		
CL	12.1 - 16.3' GRAVELLY SANDY CLAY: Lt. olive gray (5Y 5/2); ~70% fines, mod plastic, slight dilatancy, med. toughness; ~15% sand, fine-to coarse-grained, mod grading, sub round to angular, qtz. frags; heavy rxn to HCL; no odor; damp.	12.0	T-6		2.5 / 2.5		9:15 13.5 9:26
		14.0	T-7		0.8 / 2.5		13.5 - 18.5 Run # 4 ~15.0' augers chattering.
SW	16.3 - 18.7' GRAVELLY SAND: Dk yel. br. (10YR 4/2); <5% fines; ~65% sand, fine- to medium-grained, well graded, sub rounded, subangular; Fe staining; saturated (but drained)	16.0	T-8		2.5 / 2.5		Ernest Solomon CEG # 350
SM	18.7 - 24.1' SILTY SAND:	18.0	T-9		2.1 / 2.5		18.5 18.5 - 23.5 Run # 5 No dripping water on sampler
		20.0					

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO104H	SHEET NO. 1 OF 2	I-3

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SM	18.7-24' SILTY SAND: Dk yel brn (10YR 4/2); ~40% fines; slight to med plastic (grading more or less), quick dilatancy, low toughness; ~60% sand, fine- to coarse-grained (mostly fine, sporadic coarse), sub angular; Fe staining; mod. pervious; moist.	20.0	T-9 (cont.)		2.1/2.5		No water coming to surface
		22.0	T-10		2.5/2.5		23.5
CL	- occasional gravel frags 23.0-24' grading less sandy	24.0	T-11		2.5/2.5		23.5-28.5 Run # 6; 24.0' H_2O level when augers removed.
	24'-33.5 SANDY CLAY: Dk. greenish gray (5G 4/1); ~85% fines, mod to high plastic, med to high toughness; ~15% sand, fine-grained, poorly graded; no organics; no odor; moist.	26.0	T-12		2.5/2.5		
		28.0	T-13		2.5/2.5		28.5; 28.5-33.5 Run # 7
	29.0-32.5 less sandy, almost fat clay	30.0					
	33.2-33.5 grading yel brn sandy clay.	32.0	T-14		2.5/2.5		
	Bottom Hole 33.5						11:15; 33.5
		34.0					Terminated boring at 33.5'. Pulled augers, hole open to 33.5', installed grout pipe to bottom hole, filled hole with grout. Cuttings and displaced H_2O removed from site.

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Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG		BORING NO.
		PROJECT NO. JCO-104H	SHEET NO. 2 OF 2	I-3

BORING LOCATION	Jasco Chemical, Behind building in Central Expressway Median
GROUND EL.	
DEPTH/~~ELEV~~. WATER	
DRILL CONTRACTOR	WEEKS
TOTAL DEPTH	71.0
DRILL RIG	Failing 1500
BORING DIA.	13.5
DATE DRILLED	18 Aug '87
LOGGED BY	P.O.J.

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC	MODE	REMARKS
	As log of boring I-3	0.0				RD	Start setting up ~ 12:00. Drilling 1:58 pm. Drilling with a 13.5" tri-cone bit. Drilling mud is POLY-GEL with H_2O. Doug - Driller. Richard & Jim - Helpers
		2.0					
		4.0					
		6.0					
		8.0					
		10.0					
		12.0					
		14.0					
SP/SW	16.0	16.0	E-1				
		18.0					2:53 — 18.0
	18.5						
		20.0					

Ernest Solomon
CEG #350

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG		BORING NO.
PROJECT NO.	SHEET NO.	
JCO 104H	1 OF 4	I-3A

BORING LOCATION			GROUND EL.
DEPTH/ELEV WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
		20.0				RD	
		22.0					
	24.0 - SANDY CLAY: As log of boring I-3	24.0					Drilled to 29.0' with 13½ tricone, stopped at 29.0' and installed 8 5/8" steel casing. Pushed casing to 21.0' with rig.
		26.0					
		28.0	B-2				3:18 18 AUG '87 29.0'
		30.0				PUSH	19 AUG Arrived on site 8:00AM Switched to 7.0" tricone Start drilling 11:03 AM
			R-1	8	1.5 / 2.0	DR	11:21 31.0 - 33.0' Drove 3.0" split spoon sampler w/a 140 lb slide hammer free-falling 30.0" per blow. Sampler is lined with 2½" x 6.0" brass tubes (termed R-1, R-2, ..., etc)
		32.0	R-2	15			
			R-3	24			
			R-4	20			
		34.0	B-3			RD	11:38
		36.0					
		38.0	B-4				
	~39.0 grading more sandy (rounded).	40.0					

Wahler Associates

JASCO CHEMICAL CORPORATION

EXPLORATION BORING LOG

PROJECT NO.	SHEET NO.	BORING NO.
JCO 104H	2 OF 4	I-3A

BORING LOCATION			GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR		TOTAL DEPTH
DRILL RIG	BORING DIA.	DATE DRILLED	LOGGED BY

SOIL CLASS.	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
CL	24.1 - 47.5 SANDY CLAY: (cont.)	40.0				RD	
		42.0	B-4 (cont)				WELL CONSTRUCTION 2.0" SCH 40 PVC 0.0-49.0 solid 49.0-55.0 slotted Install locking well cover SEAL 0.0-43.5 grout
		44.0					12:20 45.0' 43.5-46.5 bentonite
	47.0-47.5' grades to sandy	46.0	B-5				46.5-55.5 SAND (#3) 55.0-59.5 Bentonite 59.5-71.0 SAND
SW	47.5 - 71.0 GRAVELLY SAND: DK yel brn (10 YR 4/2); ~5-10% fines, non plastic; ~60-70% sand, fine- to coarse-grained, mod to well graded; sub rounded; sandstone fragments, Fe coatings; ~20-35% gravel, fine, rounded, Fe coatings; non cemented; soil is highly pervious, no odor; very dense; saturated.	48.0	B-6				12:30 49.0-49.6 Drove 3.0" OD split-spoon sampler with 140 lb slide hammer. Refusal.
			R-5 / B-7	135	0.4/0.6	DR	49.6
		50.0				RD	
		52.0	B-8				
	54.5 some brn clay in cuttings.	54.0	B-9				
CL	56.5 - 57.5 Sandy CLAY Blueish gray, roots, damp.	56.0					1:25 57.0-58.2 Drove split-spoon sampler Refusal @ 58.2'
SW			R-6	18		DR	
			R-7	45			
		58.0	B-10	50			
						RD	
		60.0	B-11				

Wahler Associates	JASCO CHEMICAL CORPORATION	EXPLORATION BORING LOG	BORING NO.
		PROJECT NO. JCO 104 H · SHEET NO. 3 OF 4	I-3A

BORING LOCATION		GROUND EL.
DEPTH/ELEV. WATER	DRILL CONTRACTOR	TOTAL DEPTH
DRILL RIG	BORING DIA. / DATE DRILLED	LOGGED BY

SOIL CLASS	DESCRIPTION	DEPTH	SAMPLE NO.	PR / RQD	REC.	MODE	REMARKS
SW	470- 710 GRAVELLY SAND: (cont.) 600-710 no changes	600				RD	
		620					
			B-11 (cont)				
		640					
		660					
		680					
				36			690'- 710' Drove split spoon sampler
		700	R-8	51	1.3 / 2.0	DR	
			R-9	54			
	Bottom Hole 710'		R-10	70			2:40
		72.0					Terminated boring at 71.0'. Flushed hole, backfilled to 59.0' with #3 sand, to 560 with bentonite and installed well. Pumped seal after well was in place and placed locking steel cover pipe.
		74.0					

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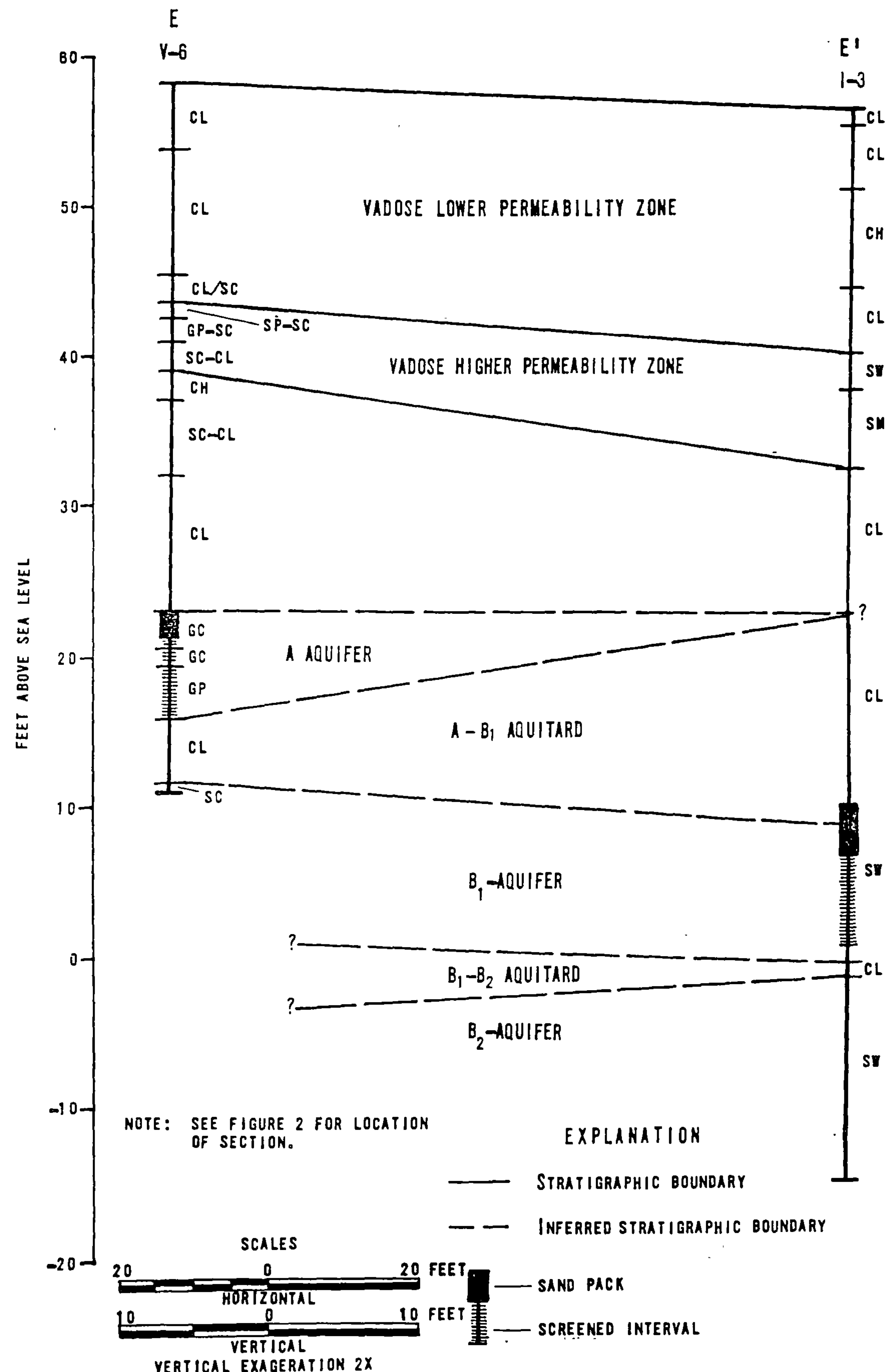
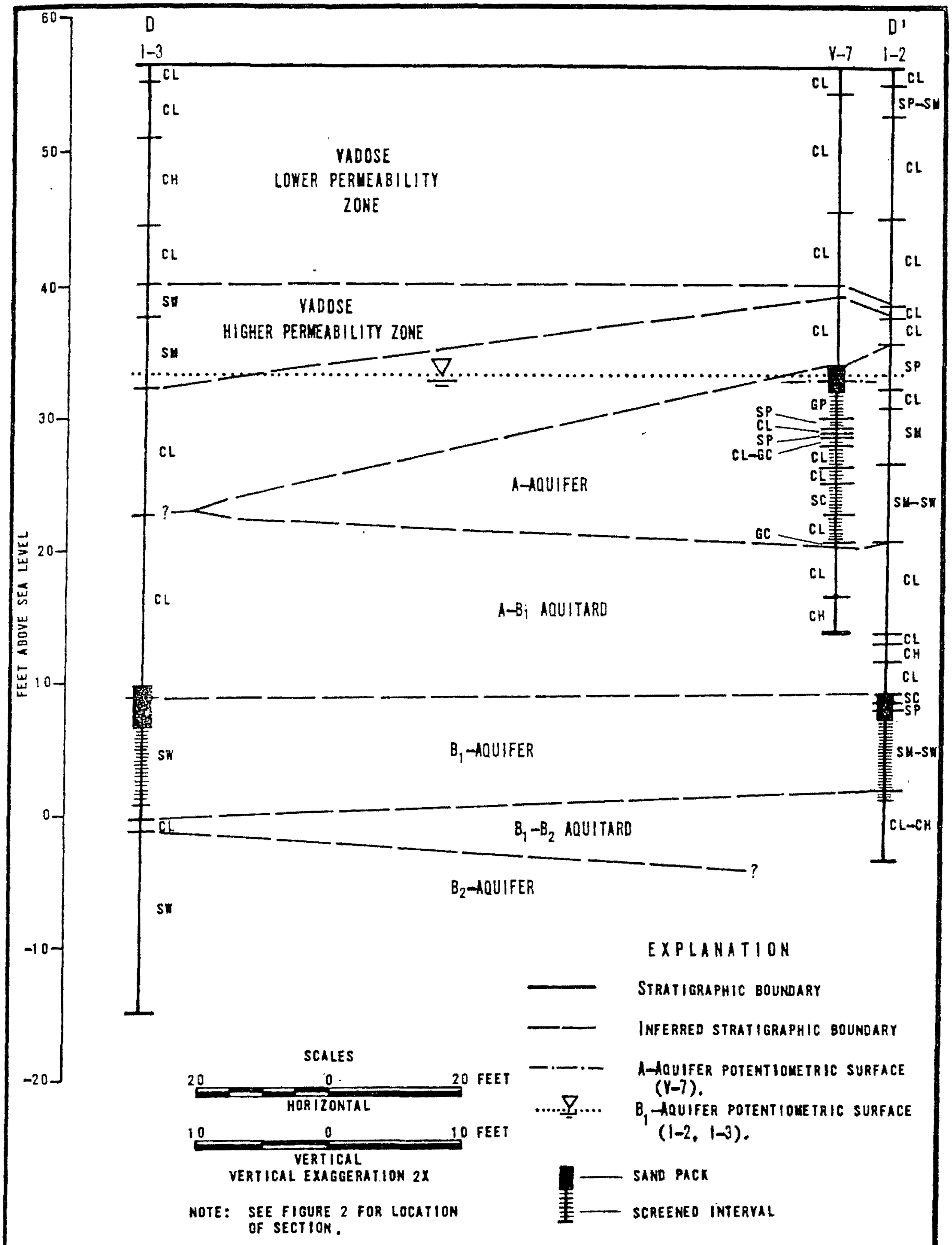
		PROJECT NO. JCO 104 H / SHEET NO. 4 OF 4	I-3A



Wahler Associates	JASCO CHEMICAL CORPORATION PHASE II HYDROGEOLOGIC INVESTIGATION	GEOLOGIC CROSS SECTION E-E'		
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO • CALIFORNIA	JCO-104H	OCTOBER 1987	10



Wahler Associates	JASCO CHEMICAL CORPORATION PHASE II HYDROGEOLOGIC INVESTIGATION	GEOLOGIC CROSS SECTION D-D'
	PALO ALTO • CALIFORNIA	PROJECT NO. JCO-104H / DATE OCTOBER 1987 / FIGURE NO. 9

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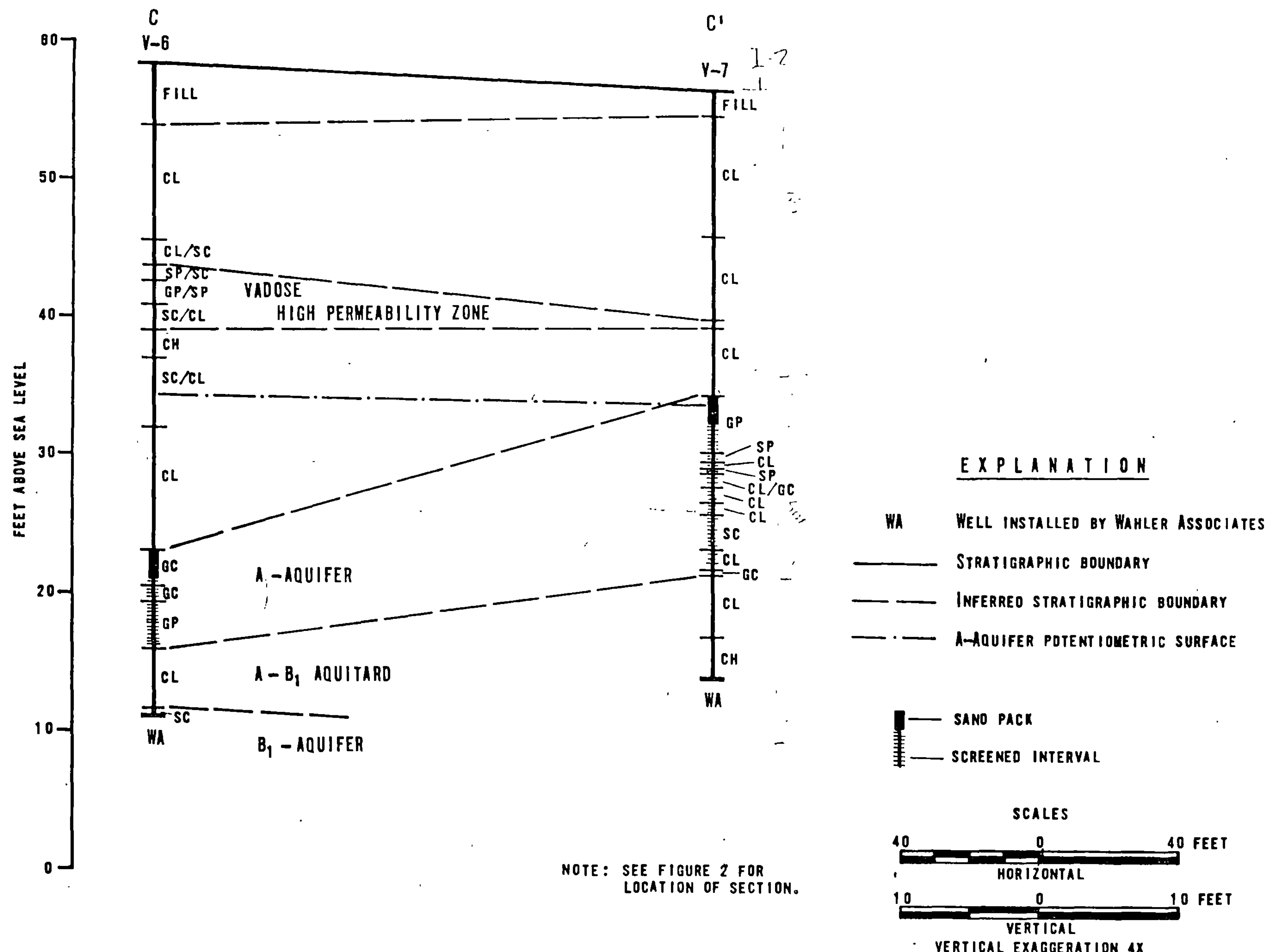
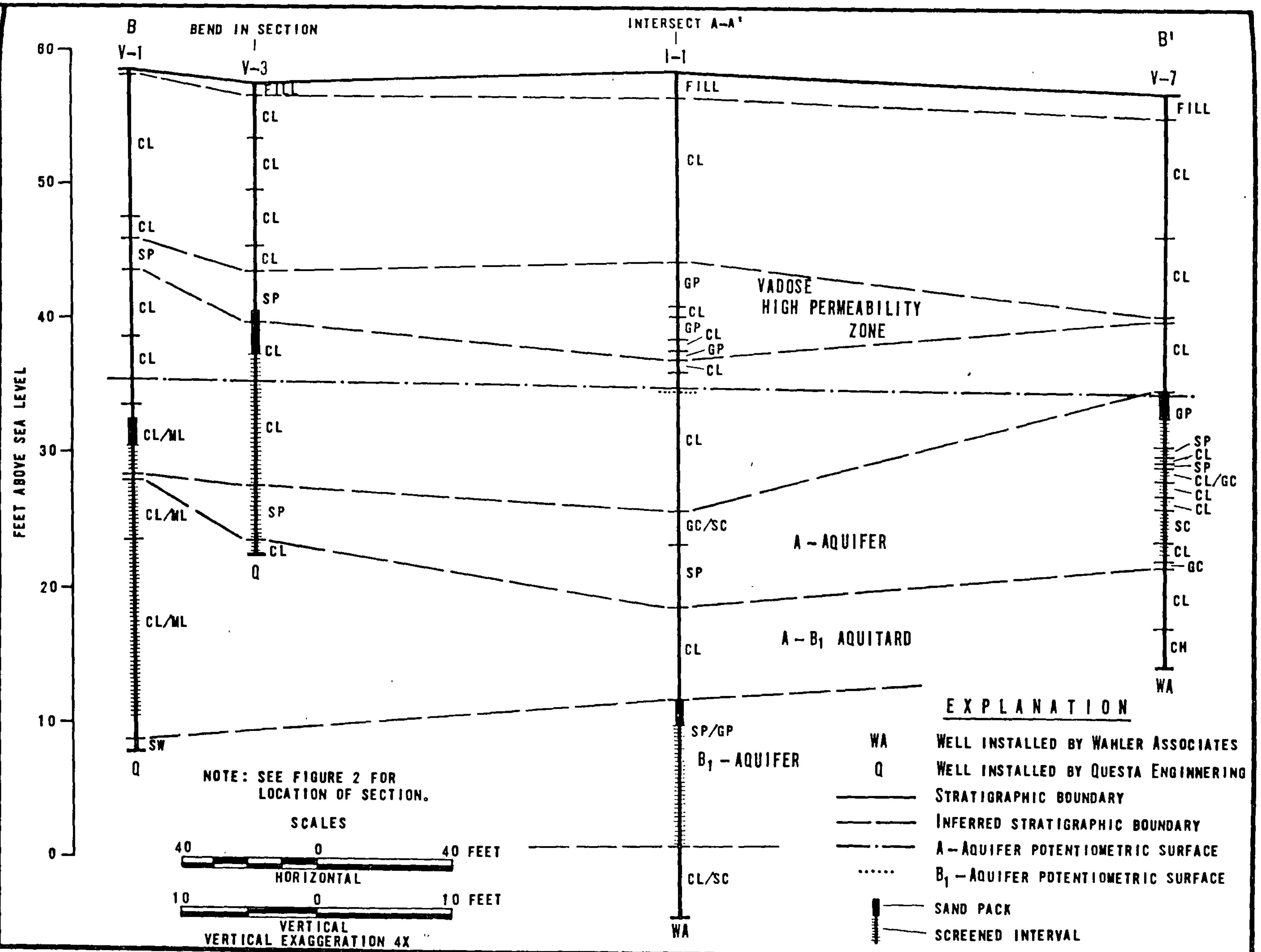
PHASE II HYDROGEOLOGIC INVESTIGATION
PALO ALTO • CALIFORNIA

GEOLOGIC CROSS SECTION C–C'

PROJECT NO. JCO–104H
DATE OCTOBER 1987
FIGURE NO. 8





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PHASE II HYDROGEOLOGIC INVESTIGATION
PALO ALTO • CALIFORNIA

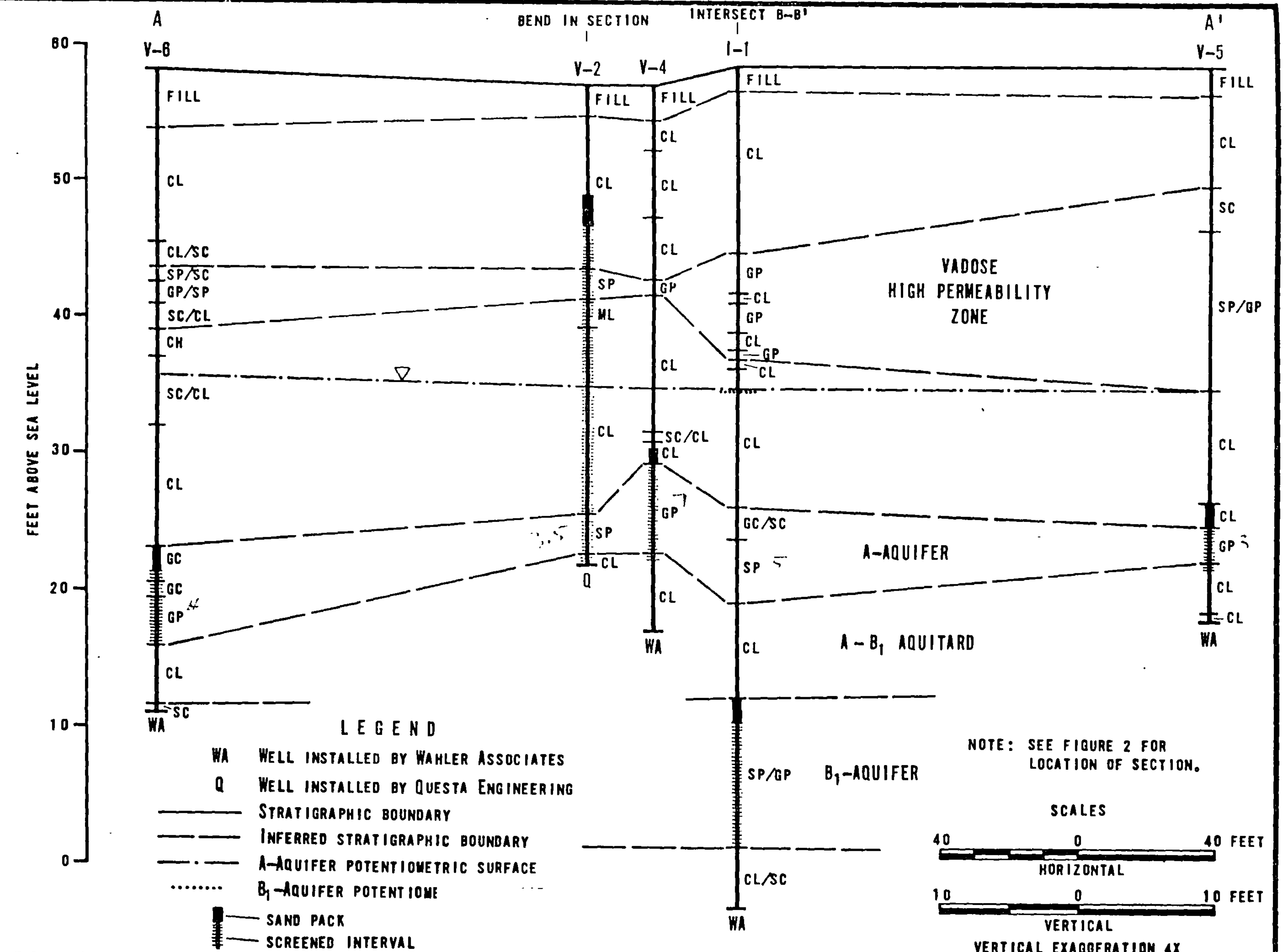
GEOLOGIC CROSS SECTION B-B'

PROJECT NO. JCO-104H

DATE OCTOBER 1987

FIGURE NO. 7

154W



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PHASE II HYDROGEOLOGIC INVESTIGATON

PALO ALTO • CALIFORNIA

GEOLOGIC CROSS SECTION A-A'

PROJECT NO.	DATE	FIGURE NO.
JCO-104H	OCTOBER 1987	6

APPENDIX C
LABORATORY INVESTIGATION OF ENGINEERING PROPERTIES OF SOIL

APPENDIX B
LABORATORY INVESTIGATION

A. INTRODUCTION

This appendix includes a discussion of the procedures followed during the laboratory testing performed on soil samples from wells I-2 and I-3. The investigation program was carried out employing, in most cases, currently accepted test procedures of the American Society of Testing and Materials (ASTM).

Undisturbed thin wall tube samples used in the laboratory investigation were obtained during the course of the field investigation as described in the Well Construction Section of this report. Identification of each sample is by hole number, sample number, and depth.

B. INDEX PROPERTIES TESTING

In the field of soil mechanics, it is advantageous to have a standard method of identifying soils and classifying them into categories or groups that have similar or distinct engineering properties. The most commonly used method of identifying and classifying soils according to their engineering properties is the Unified Soil Classification System (USCS), as described by ASTM D2487-83. The USCS is based on a recognition of the various types and significant distribution of soil characteristics, and plasticity of materials.

The index properties tests discussed in this report include the determination of natural and as-tested water content and dry density, vertical permeability, grain-size distribution, and Atterberg limits.

1. Natural Water Content and Dry Density

Natural water content and dry density were determined, usually in conjunction with other tests, on selected undisturbed tube samples. The samples were extruded and visually classified, trimmed to obtain a smooth flat face, and accurately measured to obtain volume and wet weight. The samples were then dried, in accordance with ASTM 2216-80, for a period of 24 hours in an oven maintained at a temperature of 110°C. After drying, the weight of each sample was determined and the moisture content and dry density calculated. All the water content and dry density results are summarized in Table B-1 and are also shown with the various other index and engineering properties test results.

2. Grain-Size Distribution

The gradation characteristics of selected samples were determined in accordance with ASTM D422-63 and USBR E-6, except as modified below. The gravelly samples were initially sieved through the 3/4-inch and 1-1/2-inch sieves. Representative samples were obtained and soaked in water until individual soil particles were separated and then washed on the No. 200 mesh sieve. That portion of the material retained on the No. 200 mesh sieve was oven-dried and then mechanically sieved. A hydrometer analysis was performed on a representative portion of the minus No. 200 mesh material of selected samples. The hydrometer test was run in a constant-temperature hydrometer bath using sodium hexametaphosphate as a dispersing agent. The grain-size distribution tests are presented on Figures B-1 and B-2.

3. Atterberg Limits

Liquid and plastic limits were determined on selected samples in accordance with ASTM Designation D4318-83. Results of the Atterberg limits tests are summarized on Figure B-3.

C. ENGINEERING PROPERTIES TESTING

Vertical permeability tests were performed on selected soil samples from Wells I-2 and I-3.

Permeability Tests

The tests were performed in general accordance with the Corps of Engineers Test Method EM-1110-2-1906. Below is a description of the test procedure.

The samples were extruded from the tubes and placed in a special cradle that supported the specimen horizontally while the ends were trimmed to a flat face. After the initial weight and volume measurements were determined, each specimen was placed in a triaxial cell, encased in a latex membrane and sealed to the bottom pedestal and top cap with rubber "O" rings. After securing the triaxial chamber, the cell was filled with water and transported to the saturation bay. The samples were saturated using a combination vacuum-back pressure technique. A small vacuum was applied to de-air the lines and increase the initial saturation without a change in void ratio. A back pressure of 50 psi was then incrementally applied to obtain a sufficient degree of saturation prior to consolidation. In order to determine whether the back pressure applied was causing complete saturation, Skempton's "B" parameter in excess of 0.9 was measured for all samples. After achieving saturation, the samples were consolidated to pressures equivalent to overburden load.

The permeability was determined by applying a constant head hydraulic gradient and monitoring the flow of water from bottom to top of the sample through calibrated constant diameter sight tubes as a function of time. The consolidation pressure and head pressure used for each test appears on the data sheet. The permeability test results, together with the gradation characteristics of the samples tested are presented in Table B-1.

TABLE B-1

PERMEABILITY TEST RESULTS

				Natural		As-Tested				
Hole No.	Sample No.	Depth, ft.	USCS Classification	Water Content (%)	Dry Density (pcf)	Water Content (%)	Dry Density (pcf)	Consolidated Pressure (psi)	Head, (psi)	Coefficient of Permeability cm/sec
I-2	T-6	13.7-14.2	CH	26.2	92.5	29.5	95.2	11	0.5	2.4×10^{-4}*
I-2	T-13	31.7-32.4	SW-SM	15.1	119.1	15.2	121.1	27	0.5	2.3×10^{-4}
I-2	T-15	37.4-37.9	CL	27.5	97.7	25.8	101.5	26	2.0	3.1×10^{-7}
I-2	R-10	47.5-48.0	SW-SM	17.4	110.9	17.9	113.5	32	0.5	2.3×10^{-4}
I-2	R-15	56.5-57.0	CL	23.0	104.8	20.8	110.5	36	5.0	2.3×10^{-8}
I-3	T-6	12.9-13.4	CL	20.0	102.6	23.7	105.1	11	0.5	2.5×10^{-4}*
I-3	T-10	22.7-23.2	SP-SM	14.8	122.7	14.3	124.8	23	1.0	5.2×10^{-5}
I-3	T-12	26.2-26.7	CL	25.7	98.5	24.3	101.7	22	2.0	2.8×10^{-6}
I-3	R-5	49.0-49.5	SW	13.4	124.7	12.3	128.2	37	0.5	1.2×10^{-4}
I-3	R-6	57.0-57.5	SC	21.6	108.4	19.7	112.5	38	2.0	2.9×10^{-7}

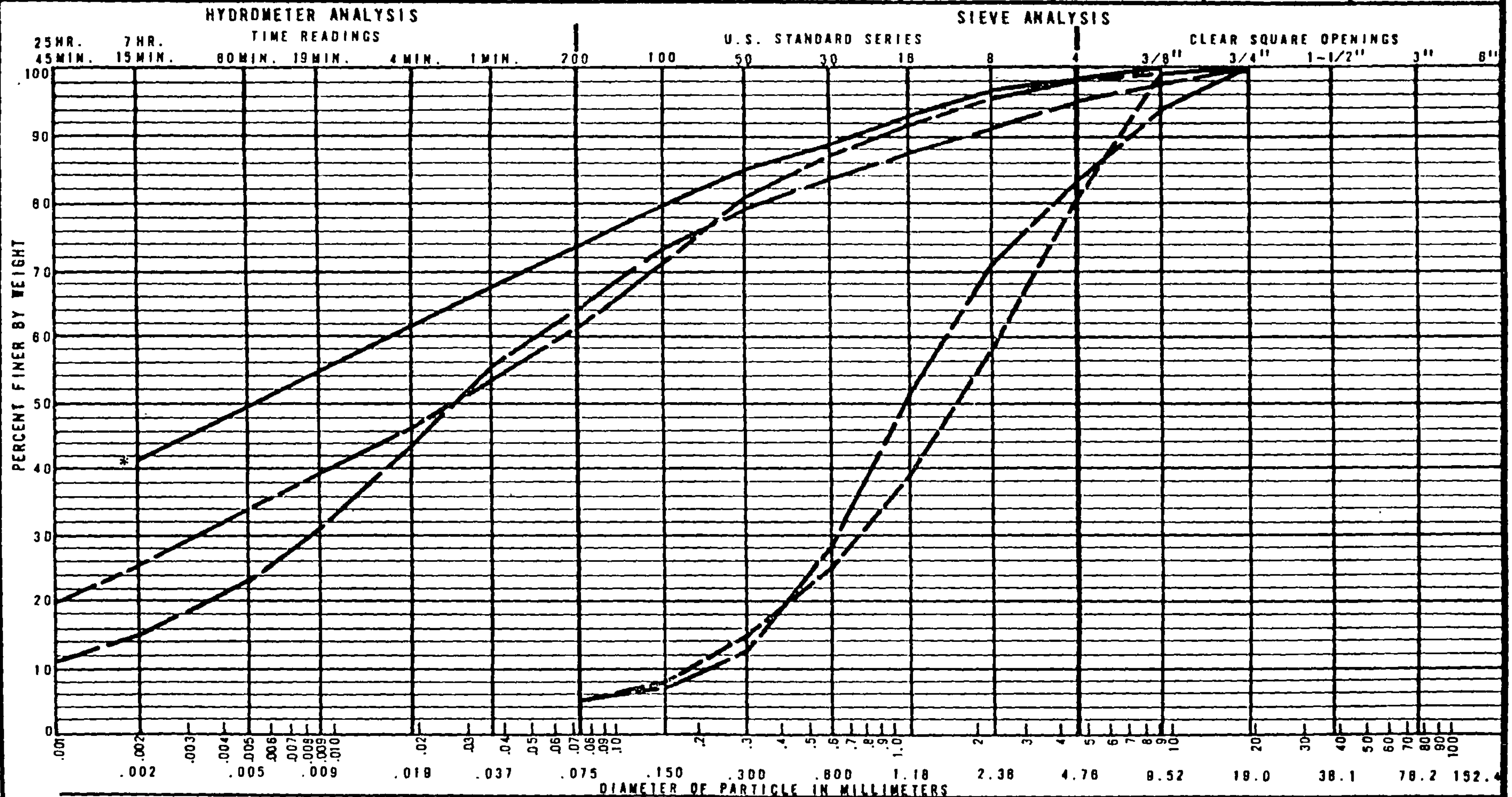
*Permeability was influenced by roots and root holes in samples.

Samples were tested in triaxial cells after back pressure saturation and consolidation equal to overburden load. The permeability was determined by applying a constant head hydraulic gradient and monitoring the flow of water from bottom to top of the sample through calibrated constant diameter sight tubes as a function of time.

*DISPERSING AGENT WAS INEFFECTIVE AFTER 7 HOUR READING

KEY:

LL	52	NP	38	NP	42				
PL	20	NP	21	NP	20				
PI	32	0	17	0	22				
NAT. W/C%	27.1	15.1	27.5	17.4	21.4				
SPEC. GRAVITY	----	----	----	----	----				
CLASSIF.SYMB.	CH	SW-SM	CL	SW-SM	CL				
SAMPLE NO.	T-6	T-13	T-15	R-10	R-15				
DEPTH, FT.	13.7-14.2	31.7-32.9	37.4-37.9	47.5-48.0	56.5-57.0				
HOLE NO.	I-2	I-2	I-2	I-2	I-2				



Woodward-Clyde Associates

JASCO CHEMICAL CORPORATION
PHASE II HYDROGEOLOGIC INVESTIGATION

PALO ALTO • CALIFORNIA

GRADATION TEST RESULTS
ASTM D422-63 & USBR E-6

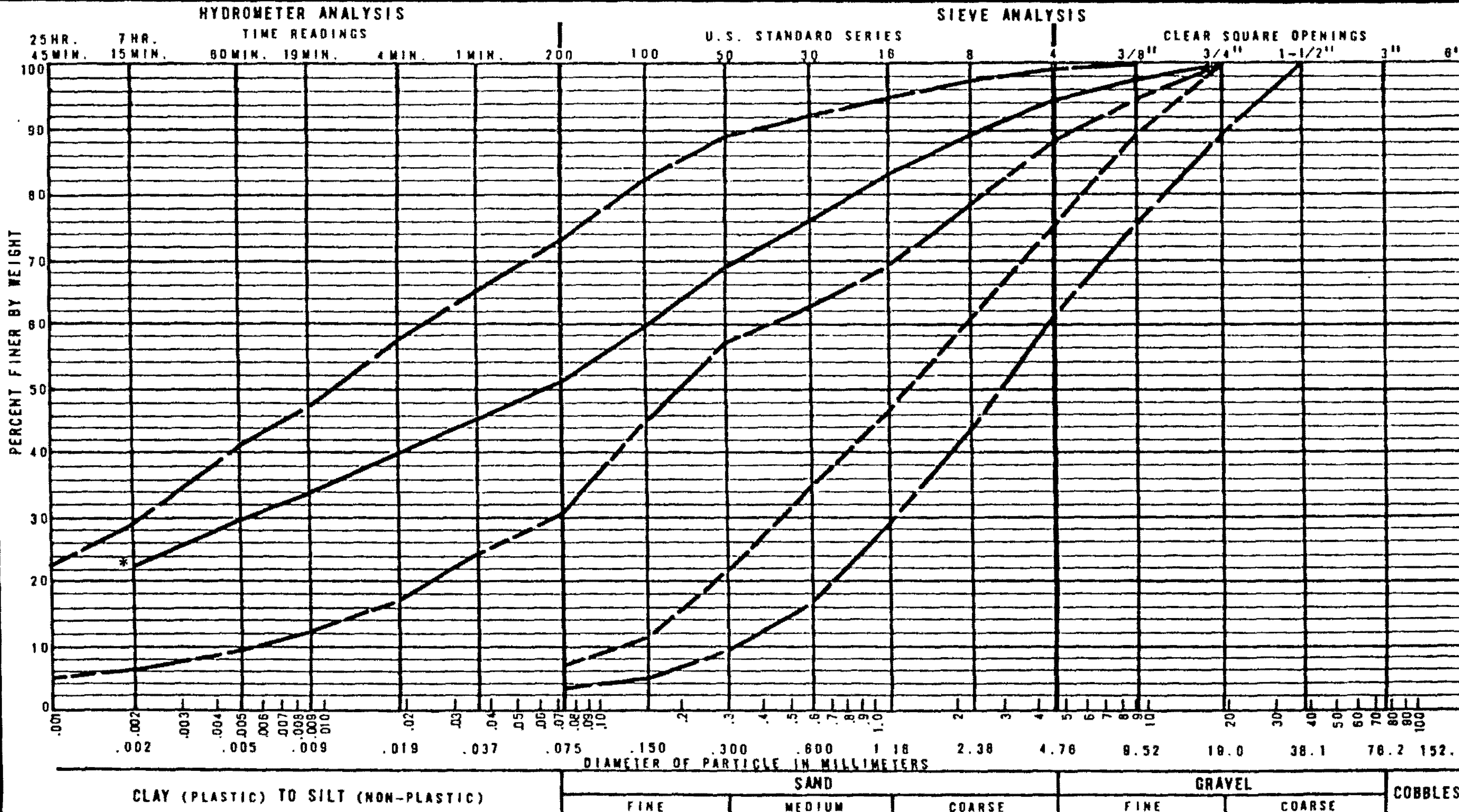
PROJECT NO. JCO-104H

DATE OCTOBER 1997

FIGURE NO. 9-1

*DISPERSING AGENT WAS INEFFECTIVE AFTER 7 HOUR READING.

KEY:									
LL	45	NP	37	NP	32				
PL	19	NP	21	NP	21				
PI	26	0	16	0	11				
NAT. W/C	18.6	14.8	24.8	13.4	20.2				
SPEC. GRAVITY	----	----	----	----	----				
CLASSIF. SYMB.	CL	SP-SM	CL	SW	SC				
SAMPLE NO.	T-6	T-10	T-12	R-5	R-6				
DEPTH, FT.	12.9-13.4	22.7-23.2	26.2-26.7	49.0-49.5	57.0-57.5				
HOLE NO.	I-3	I-3	I-3	I-3	I-3				



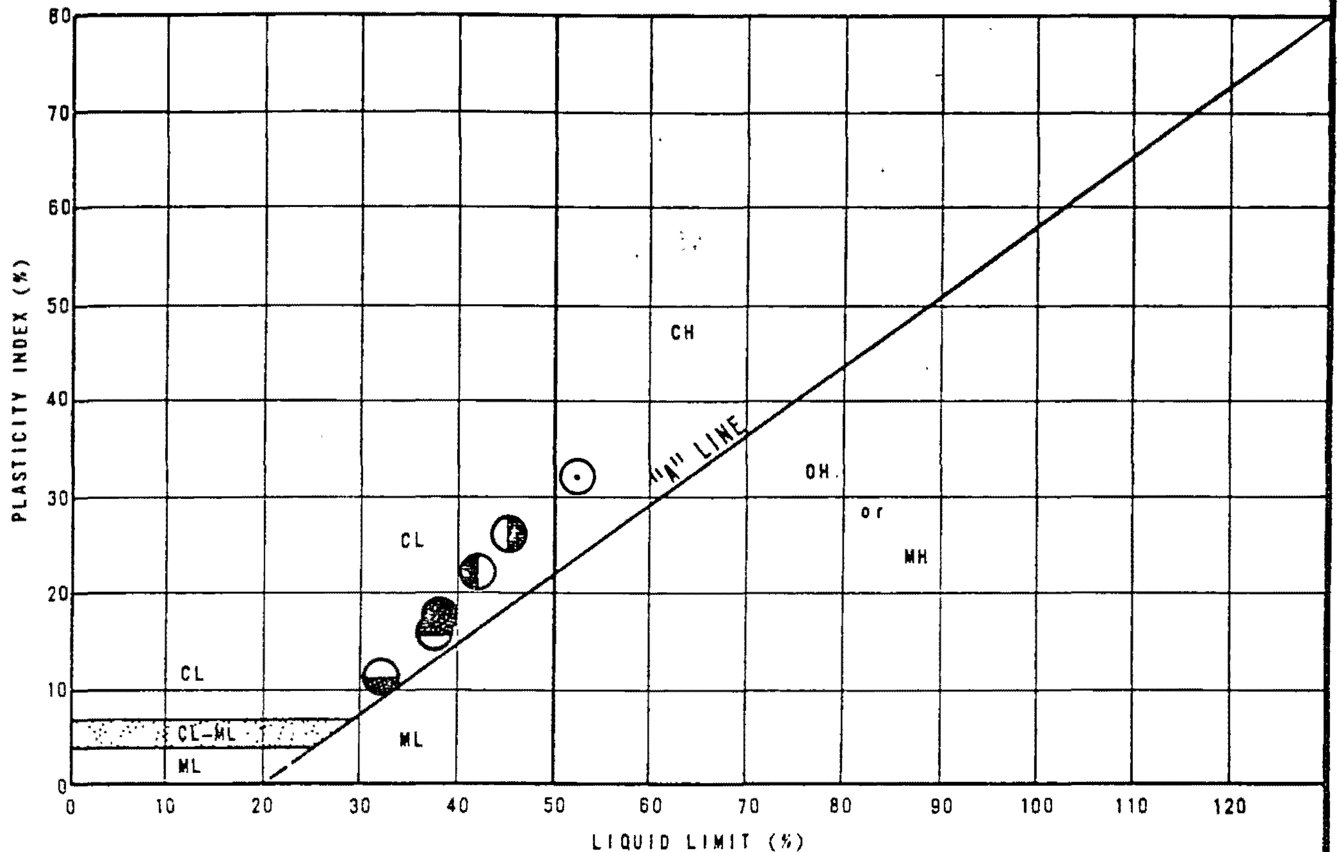
Wahler Associates

JASCO CHEMICAL CORPORATION
PHASE II HYDROGEOLOGIC INVESTIGATION
PALO ALTO • CALIFORNIA

GRADATION TEST RESULTS
ASTM D422-63 & USBR E-6

PROJECT NO. JCO-IC4H
DATE OCTOBER 1987
FIGURE NO. B-2

PLASTICITY CHART



PLASTICITY DATA

KEY SYMBOL	HOLE NUMBER	DEPTH (ft)	NATURAL WATER CONTENT W (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX $\left(\frac{W-PL}{LL-PL}\right)$	UNIFIED SOIL CLASSIFICATION SYMBOL
⊙	I-2, T-6	13.7-14.2	27.1	20	52	32	----	CH
	I-2, T-15	37.4-37.9	27.5	21	38	17	----	CL
	I-2, R-15	56.5-57.0	21.4	20	42	22	----	CL
	I-3, T-6	12.9-13.4	18.6	19	45	26	----	CL
	I-3, T-12	26.2-26.7	24.8	21	37	16	----	CL
	I-3, R-6	57.0-57.5	20.2	21	32	11	----	SC

Wahler Associates	JASCO CHEMICAL CORPORATION PHASE II HYDROGEOLOGIC INVESTIGATION	ATTERBERG LIMITS - PLASTICITY DATA ASTM D4318-84
	PALO ALTO • CALIFORNIA	PROJECT NO. JCO-104H · DATE OCTOBER 1987 · FIGURE NO. B-3

APPENDIX D
AQUIFER TESTING REPORT

AQUIFER TESTING REPORT
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

A. INTRODUCTION

1. Purpose

This aquifer testing report has been prepared in response to Provision C.2.c.2 of Cleanup and Abatement Order No. 87-094 issued to Jasco Chemical Corporation (Jasco) by the California Regional Water Quality Control Board (CRWQCB) on August 3, 1987. The objectives of the investigation are as follows:

a. To determine values of transmissivity, hydraulic conductivity and storativity for the A-aquifer, as well as lateral variability in these properties.

b. To evaluate whether the A-aquifer at the Jasco facility is a confined aquifer.

c. To evaluate whether hydraulic connection exists between the A and B_1-aquifers at and in the vicinity of the Jasco site.

d. To evaluate the effects of external influences (e.g., barometric pressure) on ground water levels.

e. To evaluate the effectiveness of well V-4 as an extraction well.

This report presents the methods used during the field investigation, summary of the site hydrogeology, the solution techniques used to analyze the data acquired in the field, analysis of the aquifer testing results, and conclusions based on the data. Appendices containing the field data, analytical solution documentation, and aquifer testing protocols are also included.

This report is organized into six sections: (A) an introductory section, (B) a discussion of the site hydrogeology, (c) the pumping test methodology and results, (D) the slug test methodology and results, (E), a conclusions section, and (F) a statement of limitations.

2. Site Description

Jasco Chemical Corporation is located at 1710 Villa Street, Mountain View, California (Figure 1). The 2.05-acre Jasco site is bordered on the north by the Southern Pacific Railroad and the Central Expressway and by residential units on the remaining sides. The Jasco site has historically been zoned and used for industrial purposes, but is now zoned residential. Within a one-mile radius of the site, the current land use is a combination of light industrial, commercial and residential. The actual plant location is on the northern portion of the property, leaving approximately 66 percent of the site as vacant land.

The Jasco site is located on a gently sloping alluvial plain which terminates at San Francisco Bay, approximately 2.5 miles north of the site. Permanente Creek, a northward-flowing, concrete-lined and channelized stream is located approximately 600 feet to the west-northwest of the site.

Preliminary investigations of the Jasco site have led to the discovery of a number of volatile organic compounds in the subsurface, primarily chemicals that have been stored at the site by Jasco. While a variety of organic compounds have been detected in the subsurface, the compounds with the highest observed concentrations are: 1,1,1-trichloroethane, 1,1-dichloroethane, and methylene chloride.

3. Scope of Work Performed

As part of the work program, slug tests were performed on existing A-aquifer wells V-1 through V-7 and existing B_1-aquifer wells I-1, 2, and 3. The A-aquifer wells yielded reliable estimates of transmissivity, hydraulic conductivity, and storativity. The recovery at the B_1-aquifer wells was too rapid to yield reliable estimates of these parameters. The slug tests were performed on September 27, 1987. On September 28, 1981, a step discharge test was performed at A-aquifer well V-4. The purpose of the step discharge test was to determine the appropriate pumping rate for the 48-hour constant discharge test as well as to determine the well loss coefficient for well V-4. Finally, a 48-hour constant discharge test was performed on September 29, 30, and October 1, 1987. Well V-4 was used as the pumping well. Water level variation was measured in the well V-4, as well as in observation well V-2 using an electronic data logger. Water level variations in the additional monitoring wells were monitored using an electric water level meter.

STRATIGRAPHY AND HYDROGEOLOGY

As discussed above, seven A-aquifer monitoring wells have been installed thus far, V-1 through V-7 (Figure 2). Three B_1-aquifer wells have been installed, I-1, I-2, and I-3 (Figure 2). As part of the Phaes II hydrogeologic investigation conducted earlier, laboratory classification and laboratory vertical permeability testing were performed on soil samples from I-2 and I-3 (Wahler Associates, November, 1987). The results of the classification and laboratory permeability testing will be incorporated into the discussion. The soil types have been classified according to the Unified Soil Classification System which is summarized on Figure 3.

The stratigraphy encountered in the completed borings can be divided into four relatively permeable zones: the Vadose Higher Permeability Zone, the A-aquifer, the B_1-aquifer, and the B_2-aquifer, separated by zones of lower permeability including the Vadose Lower Permeability Zone, the A-B_1 aquitard, and the B_1-B_2 aquitard. Two representative cross-sections taken from Wahler's report, "Phase II Hydrogeologic Investigation, Jasco Chemical Corporation, November, 1987", showing the above described units are enclosed as Figures 4 and 5.

a. Vadose Lower Permeability Unit - The upper 9 to 18 feet of section encountered in wells V-1 through V-7 and I-1, 2, and 3 consist of clay, and silty, sandy, or gravelly clay. In I-2, a soil sample from approximately 14 feet (I-2,T-6) was classified as a CH with a vertical coefficient of permeability of 4.7×10^{-4} ft/min. A sample from approximately 13 feet in I-3 was classified as a CL, with a vertical coefficient of permeability of 4.9×10^{-4} ft/min. The vertical permeabilities of the clay samples are much higher than one could expect considering their composition. Laboratory analysis revealed that both of the samples contained rootlets and rootlet holes, features which can increase the permeability of a soil sample.

A lower permeability unit consisting of clay to sandy clay is located between the VHPZ (discussed below) and the A-aquifer. In V-7 and I-2, this unit is located within the vadose zone. In I-3, this lower permeability unit is located within the zone of saturation.

b. Vadose Higher Permeability Zone (VHPZ) - The VHPZ ranges in thickness from a few inches in the case of V-7 and I-2 to 14.9 feet as was observed in V-5. In I-3, the VHPZ consists of 7.8 feet of dark, yellow-brown, silty to gravelly sand. The VHPZ appears to thin towards the northeast, as evidenced by the unit being represented by 7.8 feet of gravelly and silty sand in I-3, a 0.9-foot layer of gravelly clay in I-2, and by an increase in gravel content within a clay layer in V-7. This type of deposition pattern is common in an alluvial setting where rapid changes in stratigraphy are observed over short distances, both vertically and laterally.

Properties testing was performed on one VHPZ section sample from I-3 (I-3, T-10). The grain size analysis and vertical permeability testing revealed the soil to be an SP-SM, with a vertical permeability of 1.0×10^{-4} ft/min, which is rather low for sandy material. Even though the VHPZ is composed of predominantly sandy material, the VLPU has a higher coefficient of permeability, induced by rootlets and rootlet holes present in the clay.

c. <u>A-Aquifer</u> - In wells V-1 through V-7 and I-1, the A-aquifer ranges in thickness from 0.5 to 13.5 feet. In V-7, located adjacent to I-2 on the median of the Central Expressway, the A-aquifer is represented by 13.5 feet of alternating layers of sand, gravel, and clay. In I-2, located 8 feet east of V-7, the A-aquifer is represented by 14.7 feet of gravelly sand and silty sand. Soil sample I-2, T-13, identified in the field as an SM, was determined in the laboratory to be an SW-SM with a vertical permeability of 4.5×10^{-4} ft/min. From a comparison of the boring logs of I-2, I-3, and V-7, it is apparent that the thickness of the A-aquifer decreases towards the west on the median of the Central Expressway. At I-3, the equivalent of the A-aquifer is recognized as a change in the color of the soil from dark, greenish-gray to yellow-brown, as well as an increase in the sand content of the clayey material. A sample of the A-aquifer equivalent material in I-3 was not analyzed in the materials testing laboratory, as it was not recognized as aquifer material in the field.

d. <u>A-B_1 Aquitard</u> - The full thickness of the A-B_1 aquitard has been penetrated by B_1-aquifer wells I-1, 2, and 3. The thickness of the A-B_1 aquitard ranges from 6.5 feet at I-1, to 17 feet at I-2, and finally 14 feet at I-3. The A-B_1 aquitard is composed of clay to sandy clay. Properties testing was performed on two samples of A-B_1 aquitard material. Sample I-2, T-15 was classified as a CL with a vertical permeability of 6.1×10^{-7} ft/min. Sample T-12 from I-3, was also classified as a CL, but had a slightly higher vertical permeability, 5.5×10^{-6} ft/min. Rootlets or rootlet holes were not observed in either of the A-B_1 aquitard samples. The vertical permeability data indicate that the A-B_1 aquitard is of sufficiently low permeability to substantially retard the vertical migration of ground water to deeper aquifers.

e. <u>B_1-Aquifer</u> - Before the installation of B_1-aquifer monitoring wells I-2 and I-3, the full thickness of the B_1-aquifer had been penetrated only at I-1 where it was composed of gravelly sand (SP-GP) and had an observed thickness of 11.2 feet. At I-2, the B_1-aquifer is composed of 7.5 feet of silty, gravelly, sand, identified in the laboratory as an SW-SM, with a vertical permeability of $4.5x10^{-4}$ ft/min. The B_1-aquifer at I-3 is composed of 9.0 feet of gravelly sand, identified in the laboratory as an SW. The vertical permeability observed at I-3, $2.4x10^{-4}$ ft/min, is similar to that observed for the B_1-aquifer at I-2. The vertical permeability values obtained for soil samples from the B_1-aquifer are similar to the value calculated for the A-aquifer material taken from I-2 ($4.5x10^{-4}$ ft/min).

f. $\underline{B_1\text{-}B_2}$ Aquitard - At I-2, five feet of B_1-B_2 aquitard material were penetrated before drilling was terminated at 59.5 feet. Laboratory testing revealed the aquitard material to be a CL (field identified as a sandy clay) with a vertical permeability of $4.5x10^{-8}$ ft/min. At I-3, a one-foot thick bed of bluish-gray, sandy clay, of the same type as observed in I-2, was found from 56.5 to 57.5 feet. A sample taken from the same sandy clay unit M-I-3 (I-3, R-6) was identified in the laboratory as an SC (clayey sand). Although the sample was identified as an SC, the vertical permeability, $5.7x10^{-7}$ ft/min, is typical for aquitard material. Although only one foot of aquitard material exists between the B_1 and B_2-aquifers at I-3, the stratigraphic and permeability data strongly show that first, the same aquitard exists at both locations, and second, the B_1-B_2 aquitard is of low permeability ($5.7x10^{-7}$ ft/min at I-3 and $5.5x10^{-8}$ ft/min at I-2). The permeability data indicate that the B_1-B_2 aquitard is of sufficiently low permeability to substantially retard the vertical migration of ground water to deeper aquifers.

g. $\underline{B_2}$-Aquifer - The B_2-aquifer was penetrated only at I-3. There are no monitoring wells screened within the B_1-aquifer. During the drilling of I-3, it was observed that the B_1 and B_2 aquifers are very similar in composition, both being composed of dark, yellow-brown gravelly sand. The top of the B_2-aquifer was penetrated at 57.5 feet. I-3 was terminated at 71.0 feet without reaching the bottom of the B_2-aquifer. A total of 13.5 feet of B_2-aquifer material were penetrated.

h. Ground Water Elevations - Maps of both the A and B_1-aquifer potentiometric surface have been constructed using water level data collected on October 7, 1987 (Figures 6 and 7).

Examination of Figure 6 reveals that at the time the ground water level data were taken, the general direction of ground water flow in the A-aquifer was 30 degrees east of north (N30°E) and the gradient 0.004 ft/ft. This A-aquifer gradient was used in the calculation of ground water velocities for the A-aquifer. The water level data from wells I-1, I-2, and I-3, indicate that the general flow direction of B_1-aquifer ground water is N15°E. The B_1-aquifer ground water gradient is 0.003 ft/ft (Figure 7).

PUMPING TESTS

The pumping tests were conducted using A-aquifer monitoring well V-4, a four-inch diameter well installed by WA as part of a ground water investigation being conducted at and in the vicinity of Jasco Chemical Corporation. Two types of pumping tests were performed at well V-4: a step-drawdown test, and a 48-hour constant discharge test (including 12 hours of recovery). Slug tests were performed in all the A-aquifer wells. Attempts were made to carry out slug tests in B_1-aquifer wells, but the test data collected was unusable due to the rapid recovery of water levels after insertion and withdrawal of the slug. The slug test results will be discussed later in this report.

Well V-4 was chosen as the pumping test location based on existing hydrogeological and ground water quality information. Extraction pumping has been conducted in V-4 since April 1987. Therefore, it was the logical choice for the constant discharge test location. Results from the pumping test in V-4 will indicate the approximate radius of influence due to pumping and hence will aid in determining the effect of extraction pumping on reducing the concentrations of chemicals in the ground water. The step-drawdown test was performed to assess the well loss coefficient and to determine a suitable pumping rate for the constant-discharge test.

The pumping test procedure is described below. Detailed pumping test protocols and a further description of the pumping test procedure may be found in Appendix A.

- All pumping test equipment was decontaminated and calibrated before being placed down each well.

- The variation in water level in well V-4 induced during the step-drawdown test were recorded with a pressure transducer/data logger system.

- A constant-discharge test was conducted after water levels had re-equilibrated following the step-drawdown test. From the step-drawdown test, 2 gpm was found to be a suitable pumping rate for V-4 in order to maintain a suitable water level above the pump. Water level variations in V-4, as well as observation well V-2, were recorded automatically with an electronic data logger system. Water levels in all other wells (A and B_1-aquifer wells) were measured manually at set time intervals during the test using an electric water level meter.

- All extracted ground water from well V-4 was discharged to local sanitary sewers in accordance with the permit issued to Jasco by the City of Mountain View.

- At the end of the constant-discharge test, water levels were monitored until they had recovered to within approximately 90 percent of their original levels.

STEP-DRAWDOWN TEST

A two-hour step-drawdown test was carried out in well V-4 on September 28, 1987. An increase in the water level drawdown was observed as the pumping rate was increased, indicating the stability of the well during the test. The test data were analyzed using the Bierschenk method (Driscoll, 1986), which involves plotting the drawdown to discharge ratio versus discharge. The well loss coefficient was determined from the resulting linear curve. From this coefficient, the head loss due to pumping well geometry and construction could be estimated for a specific pumping rate. The test data, plotted curve and detailed calculations may be found in Appendix B. A pumping rate of approximately 2 gpm was found to be suitable to sustain a desirable water level above the pump.

CONSTANT DISCHARGE TEST

A 48-hour constant-discharge test was performed in pumping well V-4, for a duration from September 29, 1987 to October 1, 1987. The pumping portion of the test lasted 36 hours. The recovery period was scheduled to be 12 hours in length, but 90 percent recovery was reached after approximately 4.5 hours.

Water level variations in V-4, the pumping well, as well as in observation well V-2 were recorded by an electric data logger/pressure transducer system. V-2 was chosen as the observation well because it was the closest to V-4 (8 feet away) and should show the largest drawdown due to pumping. Water levels in all other wells were measured periodically throughout the test, using an electric water level meter. Two analysis techniques, the Hantush-Jacob (1955) method for leaky, confined aquifer and the Jacob straight line method (Freeze and Cherry, 1979) were used in calculating the aquifer parameters from the time versus drawdown data collected at well V-2.

A computer program called Graphical Well Analysis Package (GWAP) which incorporated the Hantush-Jacob method was used to obtain estimates of transmissivity, hydraulic conductivity and storativity. The results were compared with those calculated manually using the Jacob straight line method.

After the constant-discharge test, water level recoveries in well V-4 and other wells were monitored for 12 hours until the levels reached approximately 90 percent of their original values. The recovery data was analyzed by hand, using the modified Theis equation (Driscoll, 1986). Data records of V-4 and V-2, plotted data curves, type curves, method assumptions and calculations may be found in Appendix C. The pumping test results are tabulated in Table 1. The temporal variation in water elevations measured in wells V-1, V-5, V-6, and V-7 are shown on Figure 8. The water elevation variation in V-3 is shown on Figure 9. Figure 10 shows the variation in B_1-aquifer wells I-1, 2, and 3.

The variation in barometric pressure recorded at San Jose Airport during the pumping test is shown on Figure 11. The data were used to determine if the variation in water levels was positively correlated with the barometric pressure variation. The data indicated very small pressure fluctuation over the test period. The difference between the highest and the lowest pressure was only 0.17 inches of mercury.

Comparison of the water level variation measured in the monitoring wells (Figures 8, 9, and 10) with the barometric pressure data (Figure 11) reveals little positive correlation between the two variables. The minimum barometric pressure reading was observed at hour thirty-one. Theoretically, if barometric pressure were driving the water level variation, the water elevations should have reached a maximum at this time. In fact, water levels in all of the A and B_1-aquifer wells reached their lowest elevations at hour thirty-six, just before pumping was terminated. In addition, only well V-3 shows significant water level variation during the first 25 hours of pumping, during which time the barometric pressure increases and decreases harmonically. After pumping was stopped, all wells rapidly recovered to their pre-pumping levels. Therefore, it is concluded that the decrease in water levels observed in monitoring wells V-1, V-3 through V-7 and I-1, 2, and 3 were induced by extraction from well V-4. The influence of barometric pressure on water levels, if any, was not significant. All of the A-aquifer monitoring wells monitored during the test lie within the area of influence of well V-4. The steepest drawdown of 2.2 feet at the end of pumping was observed in well V-2, located only 8 feet from V-4 (see Appendix C for drawdown records). The water elevation in well V-3, located directly up-gradient of V-4, was lowered 0.30 feet due to pumping at well V-4 (Figure 9). After pumping was terminated, the water level increased 0.19 feet during the first 3 hours of recovery. Wells V-1, V-5, V-6, and V-7 showed decreases in water elevation ranging from 0.08 to 0.13 feet (Figure 8). As was observed in well V-3, the other A-aquifer wells quickly recovered to their pre-pumping levels after pumping was terminated.

Drawdown was also observed in B_1-aquifer wells I-1, 2, and 3. Maximum drawdown was again observed at the 36-hour measurement. The drawdown ranged form 0.10 to 0.14 feet. The observed drawdown in the B_1-aquifer wells implies that under the stressed conditions created by pumping, there is a degree of interconnection between the A and B_1-aquifer at and in the vicinity of the Jasco facility.

SLUG TESTS

Slug tests were conducted in all A and B_1-aquifer wells on September 15, 1987 to evaluate the hydraulic conductivity of the aquifer material immediately adjacent to the wells. The data supplied by slug tests were used to compare with the more reliable data produced by the pumping tests. The slug test data were also used to observe the amount of variability in hydraulic conductivity there is in the A-aquifer. The slug tests consisted of lowering a solid slug of known volume into the standing water of each well which induces an instantaneous rise in water level. The decrease in water level with time inside each well was monitored using a pressure transducer/electric data logger system. After the water level had equilibrated with the slug inside well, the slug was withdrawn and the rise in water level was recorded.

The technique for determining the aquifer characteristics from slug test data was adopted from a method derived by Cooper, Bredehoeft, and Papadopules (1967). In this method, changes in water levels are plotted against time to form a curve. The curve is then matched with a type curve for slug tests, and the resulting values are used in calculating the parameters. Instead of analyzing the data manually, the computer program GWAP which incorporated the above method was used. Data records, plotted data curves and slug test type curves may be found in Appendix E. A summary of the test results is presented in Table 2.

The slug tests conducted at the A-aquifer wells yielded reliable results, the B_1-aquifer wells recovered too quickly to yield reliable data. Estimates of hydraulic conductivity, transmissivity, and storativity were therefore not calculated for the B_1-quifer wells.

CONCLUSIONS

The average horizontal hydraulic conductivity of A-aquifer was estimated to be 7.90×10^{-3} ft/min from in-situ pumping tests. The corresponding average velocity is 41.5/yr based on a hydraulic gradient of 0.004 (from Figure 6) and an effective porosity of 0.4 (see Appendix C for calculations). The three methods of analysis were:

1. Hantush-Jacob method for leaky confined aquifers;

2, Jacob Straight-Line method for bounded confined aquifers with short distance between the pumping and observation wells;

3. Jacob Solution for Recovery Data.

The hydraulic conductivity measured by the in-situ pumping test is an average value of a larger aquifer volume surrounding well V-4. This conductivity corresponds to the range for material such as silty sand or clean sand (Freeze and Cherry, 1979), which is the type of material most commonly found within the A-aquifer. The storativity estimate is within the range for confined aquifers (Freeze and Cherry, 1979), indicating that the A-aquifer is confined by the vadose zone.

The hydraulic conductivity and storativity of the A-aquifer in the immediate vicinity of each well were determined using slug tests. There is a large variation in hydraulic conductivity and storativity across the site. The highest conductivity value, 1.03×10^{-1} ft/min, was found at well V-6, with a corresponding seepage velocity of 541.4 ft/yr (see Appendix E for calculations). The lowest hydraulic conductivity was found at well V-5, with a value of $6.6x10^{-4}$ ft/min, and a corresponding flow velocity of 3.5 ft/yr. The hydraulic conductivities at the rest of the well locations, V-1, V-2, V-3, V-4, and V-7 are of similar order of magnitude and are comparable with those calculated using the pumping test data from well V-4.

The storativities at all well locations except well V-2, fall into the range for confined aquifers, while that of well V-2 is in the range for unconfined aquifers. The A-aquifer at well V-2 may not be as confined as other locations across the site. Alternatively, the fact that well V-2 is screened through a portion of the vadose zone may account for anomalous low storativity value.

The water levels at all wells during the pumping test were monitored to assess the extent of radius of influence due to pumping at well V-4. All A and B_1-aquifer wells showed positive drawdown response towards the latter portion of pumping. This indicates that the on and off-site aquifer wells lie within the zone of influence of well V-4. Drawdowns in B_1-aquifer wells indicate probable hydraulic connection between A and B_1-aquifers.

F. LIMITATIONS

The data, information, interpretations, and conclusions contained within this report are presented specifically and solely for Bronson, Bronson, and McKinnon. The conclusions and professional opinions presented herein were developed by Wahler Associates, in accordance with currently accepted geologic and hydrogeologic principles and practices. Wahler Associates cannot be responsible for any conclusions and recommendations that may be made by others, unless we have been given an opportunity to review such conclusions and concur in writing.

TABLE 1

CONSTANT DISCHARGE TEST RESULTS OF WELL V-4

Method of Analysis	T (ft^2/min)	K (ft/min)	S (--)	v (ft/yr)
Hantush-Jacob by GWAP	6.29×10^{-2}	8.98×10^{-3}	1.59×10^{-3}	47.2
Jacob Straight-Line Method	6.04×10^{-2}	8.63×10^{-3}	1.44×10^{-3}	45.4
Theis Solution for Recovery Data	4.26×10^{-2}	6.09×10^{-3}	*	32.0
		Average: 7.90×10^{-3}		Average: 41.5

Note:

T - Transmissivity

K - Hydraulic Conductivity

S - Storativity (dimensionless)

v - seepage velocity

* - residual-drawdown plot cannot be used for determining storativity (Driscoll, 1986).

TABLE 2

A-AQUIFER WELLS SLUG TEST RESULTS

Well No.	Aquifer Thickness (ft)	T (ft^2/min)	K (ft/min)	S (--)	v (ft/yr)
V-1	22.0	6.11×10^{-2} 5	2.78×10^{-3} 5	5.88×10^{-10} 6	14.6 5
V-2	12.0	6.95×10^{-2} 4	5.79×10^{-3} 4	3.67×10^{-2} 1	30.4 4
V-3	12.0	2.98×10^{-2} 6	2.48×10^{-3} 6	4.77×10^{-5} 3	13.0 6
V-4	7.0	1.05×10^{-1} 3	1.50×10^{-2} 2	1.64×10^{-3} 2	78.8 2
V-5	3.0	1.98×10^{-3} 7	6.60×10^{-4} 7	5.88×10^{-6} 4	3.5 7
V-6	7.0	7.18×10^{-1} 1	1.03×10^{-1} 1	5.88×10^{-9} 5	541.4 1
V-7	13.5	1.80×10^{-1} 2	1.33×10^{-2} 3	5.88×10^{-6} 4	70.0 3

Note:

T - Transmissivity

K - Hydraulic conductivity

S - Storativity (dimensionless)

v - seepage velocity

REFERENCES

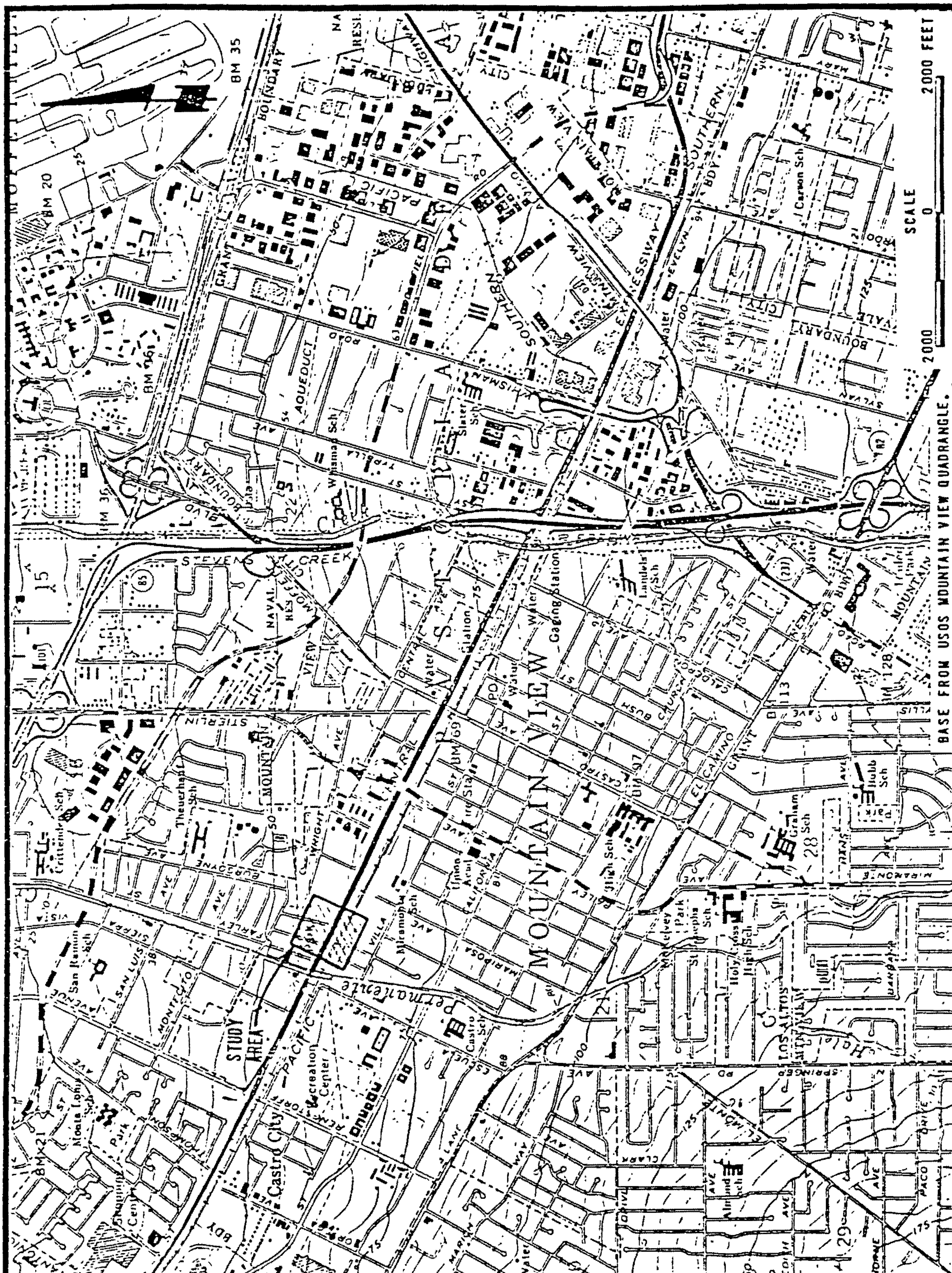
Cooper, H.H., Jr., Bredehoeft, J.D., and Papadopulos, I.S.; (1967), Response of a Finite-Diameter Well to An instantaneous Charge of Water. Water Resources Res., 3, pp. 263-269.

Driscoll, F.G; (1986), Ground Water and Wells, Johnson Division, Minnesota.

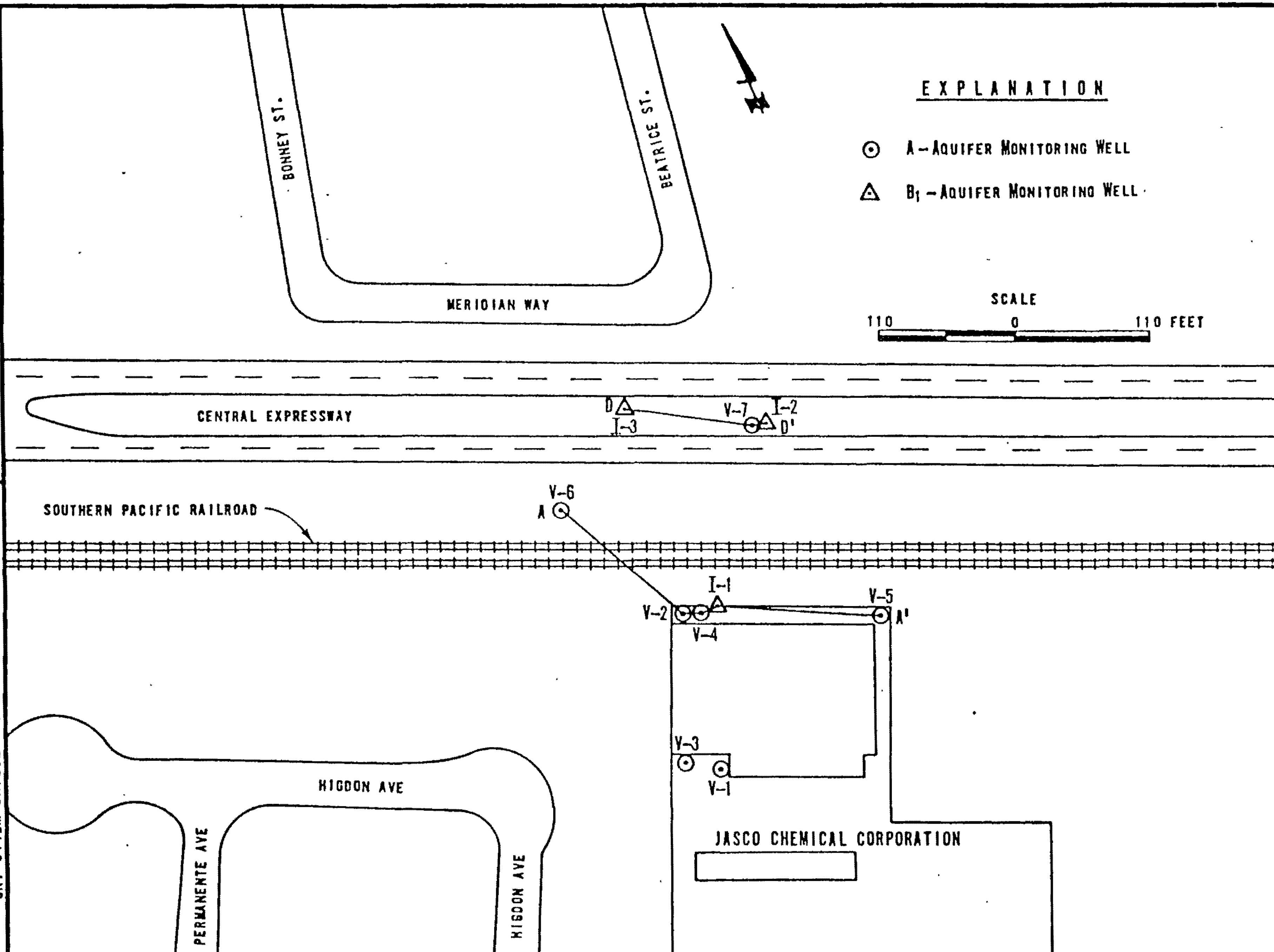
Freeze A., and Cherry, J.A.; (1979), Ground Water, Prentice Hall.

Hantush, M.S., and Jacob, C.E.; (1955), Nonsteady Radial Flow in an Infinite Leaky Aquifer, Trans. Amer. Geophys. Union, 36, pp. 95-100.

Wahler Associates; (1987), Phase II Hydrogeologic Investigation, Jasco Chemical Corporation, Mountain View, California, November, 1987.



Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER-TESTING REPORT	LOCATION OF STUDY AREA (AREA SHOWN IN FIGURE 2)		
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO • CALIFORNIA	JCO-104H	DECEMBER 1987	1



Wahler Associates

JASCO CHEMICAL CORPORATION
AQUIFER-TESTING REPORT
PALO ALTO • CALIFORNIA

A AND B_1 AQUIFER MONITORING WELLS AND GEOLOGIC CROSS SECTIONS

PROJECT NO.	DATE	FIGURE NO.
JCO-104H	DECEMBER 1987	2

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIALS IS LARGER THAN #200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN #4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	WELL GRADED GRAVELS GRAVEL-SAND MIXTURES, LITTLE OR NO FINES.
			GP	POORLY GRADED GRAVELS OR GRAVEL-SAND MIXTURES LITTLE OR NO FINES.
		GRAVEL WITH FINES	GM	SILTY GRAVELS GRAVEL-SAND-SILT MIXTURE NON PLASTIC FINES.
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES PLASTIC FINES.
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN #4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES.
			SP	POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
		SANDS WITH FINES	SM	SILTY SANDS SAND-SILT MIXTURES. NON-PLASTIC FINES.
			SC	CLAYEY SANDS SAND-CLAY MIXTURES. PLASTIC FINES.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE	SILTS & CLAYS	LIQUID LIMIT IS LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY.
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY GRAVELLY CLAYS, SANDY CLAYS SILTY CLAYS LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY.
	SILTS & CLAYS	LIQUID LIMIT IS GREATER THAN 50	MH	INORGANIC SILTS MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS ELASTIC SILTS.
			CH	INORGANIC CLAYS OF HIGH PLASTICITY FAT CLAYS.
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS.
	HIGHLY ORGANIC SOILS		PT	PEAT AND OTHER HIGHLY ORGANIC SOILS

DEFINITION OF TERMS

GRAIN SIZES

U.S STANDARD SERIES SIEVE

	200	50	16	4	3/4"	3"	6"	
SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

MOISTURE CONDITION (INCREASING MOISTURE ⟶)

DRY — SLIGHTLY DAMP — DAMP — (PL) — MOIST — VERY MOIST — WET (SATURATED) (LL)

KEY

SAMPLE NUMBER	MODE	RECOVERY
SAMPLE CONTAINER: BAG ... B JAR........... J SHELBY TUBE S DRIVE SAMPLER RINGS........ R	METHOD OF ADVANCING HOLE: DRILL FLIGHT AUGER........ AD BUCKET AUGER .... BA SPIN AUGER.......... SO HOLLOW STEM AUGER... HA ROTARY DRILL........ RD CABLE TOOL.......... CT SAMPLER DRIVE............... DR PITCHER BARREL...... PB CORE................ C PUSH................ P	RECOVERY RATIO INDICATED BY A FRACTION: $\frac{1.2}{1.5} = \frac{\text{FOOTAGE RECOVERED}}{\text{FOOTAGE SAMPLED}}$ **REMARKS** INCLUDES DRILLING INFORMATION, E.G WATER LEVEL, DATES. REFUSAL: STOPPED BY MATERIAL TOO HARD FOR EQUIPMENT. TERMINATED: SUFFICIENT INFORMATION OBTAINED. ABANDONED: STOPPED BECAUSE OF DIFFICULTIES EXPLAINED ON LOG.

PENETRATION RESISTANCE (PR)
(RECORDED AS BLOWS/0.5 FOOT)

SANDS & GRAVELS

RELATIVE DENSITY	BLOWS/FOOT*
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CLAYS & SILTS

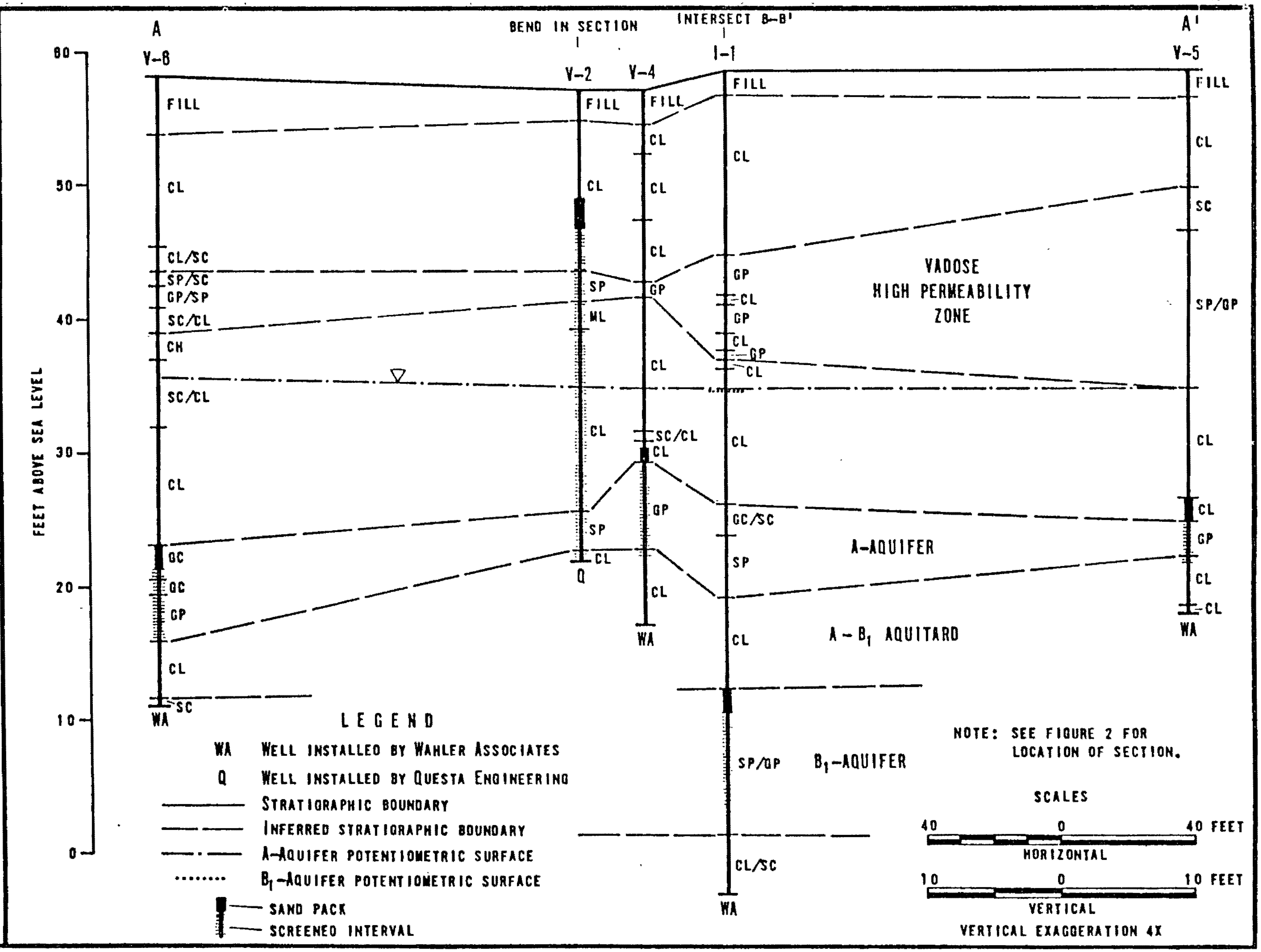
CONSISTENCY	BLOWS/FOOT*	STRENGTH †
VERY SOFT	0-2	0-¼
SOFT	2-4	¼-½
FIRM	4-8	½-1
STIFF	8-15	1-2
VERY STIFF	15-30	2-4
HARD	OVER 30	OVER 4

* Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) Split-Barrel sampler (ASTM-1586 standard penetration test).

† Unconfined compressive strength in tons/sq ft. Read from a pocket penetrometer.

Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER-TESTING REPORT	KEY FOR SOIL EXPLORATION LOGS	
		PROJECT NO	FIGURE NO.
		JCO-104H	3

154W

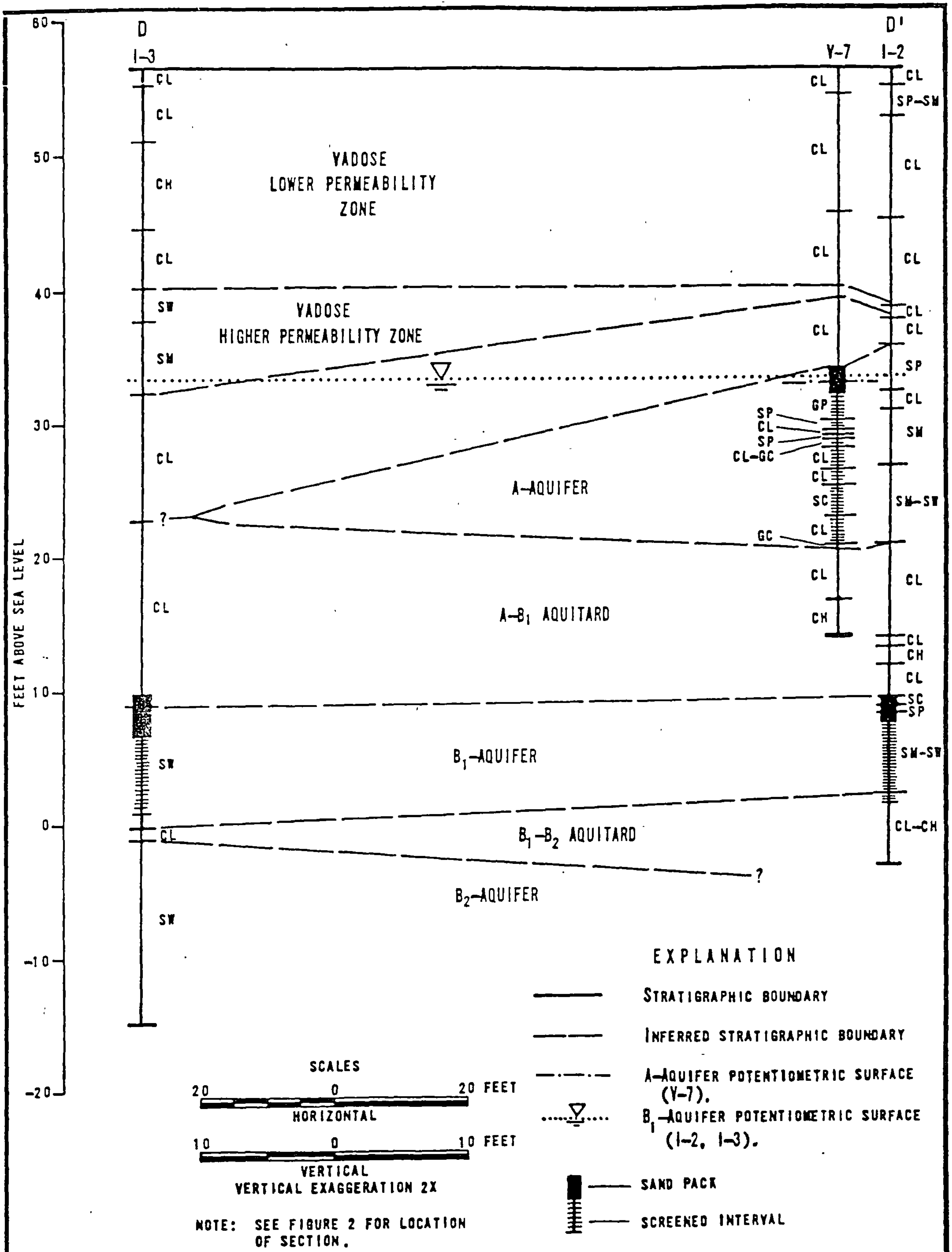


Wahler Associates

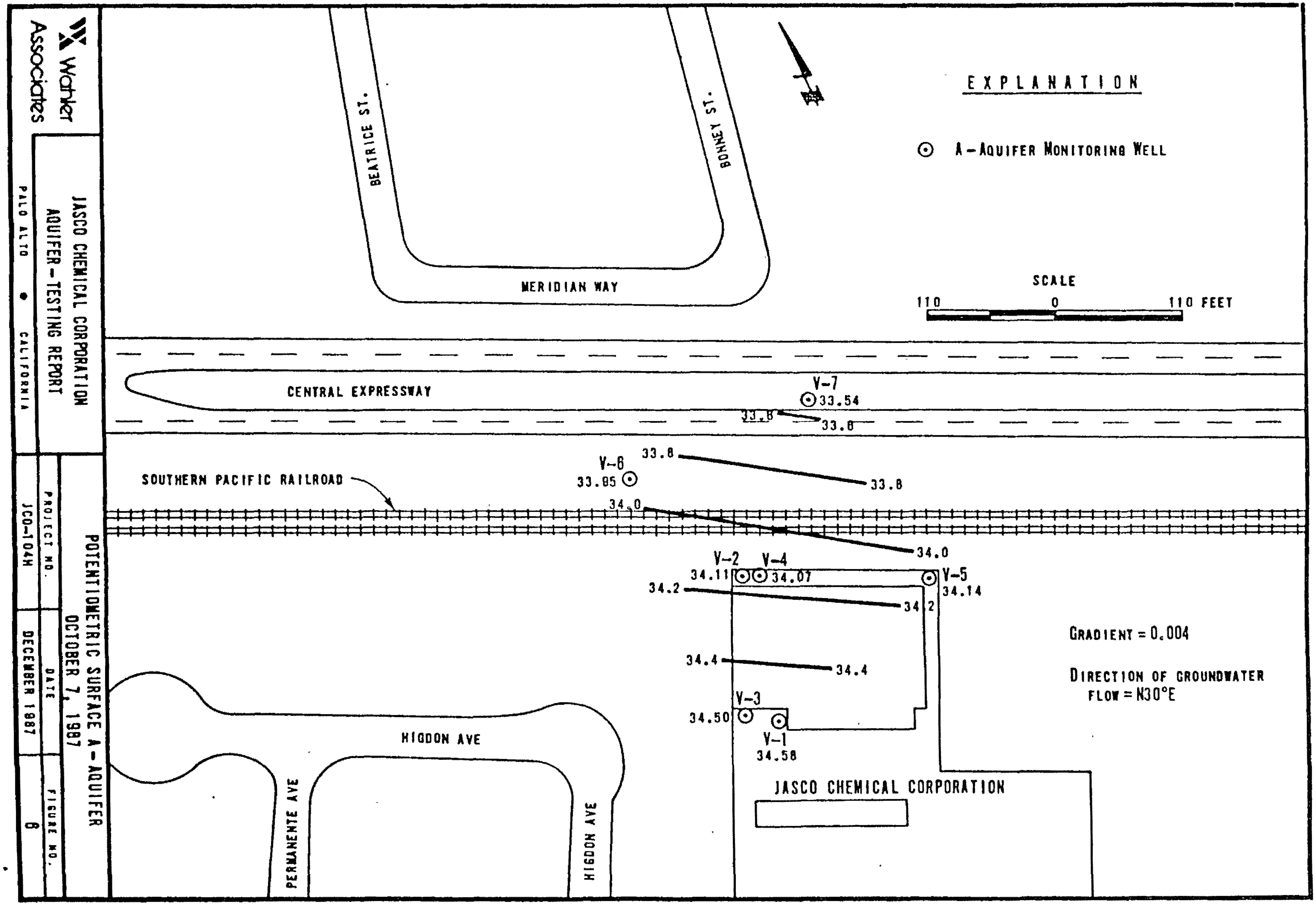
JASCO CHEMICAL CORPORATION
AQUIFER-TESTING REPORT
PALO ALTO • CALIFORNIA

GEOLOGIC CROSS SECTION A-A'

PROJECT NO.	DATE	FIGURE NO.
JCO-04H	DECEMBER 1987	4

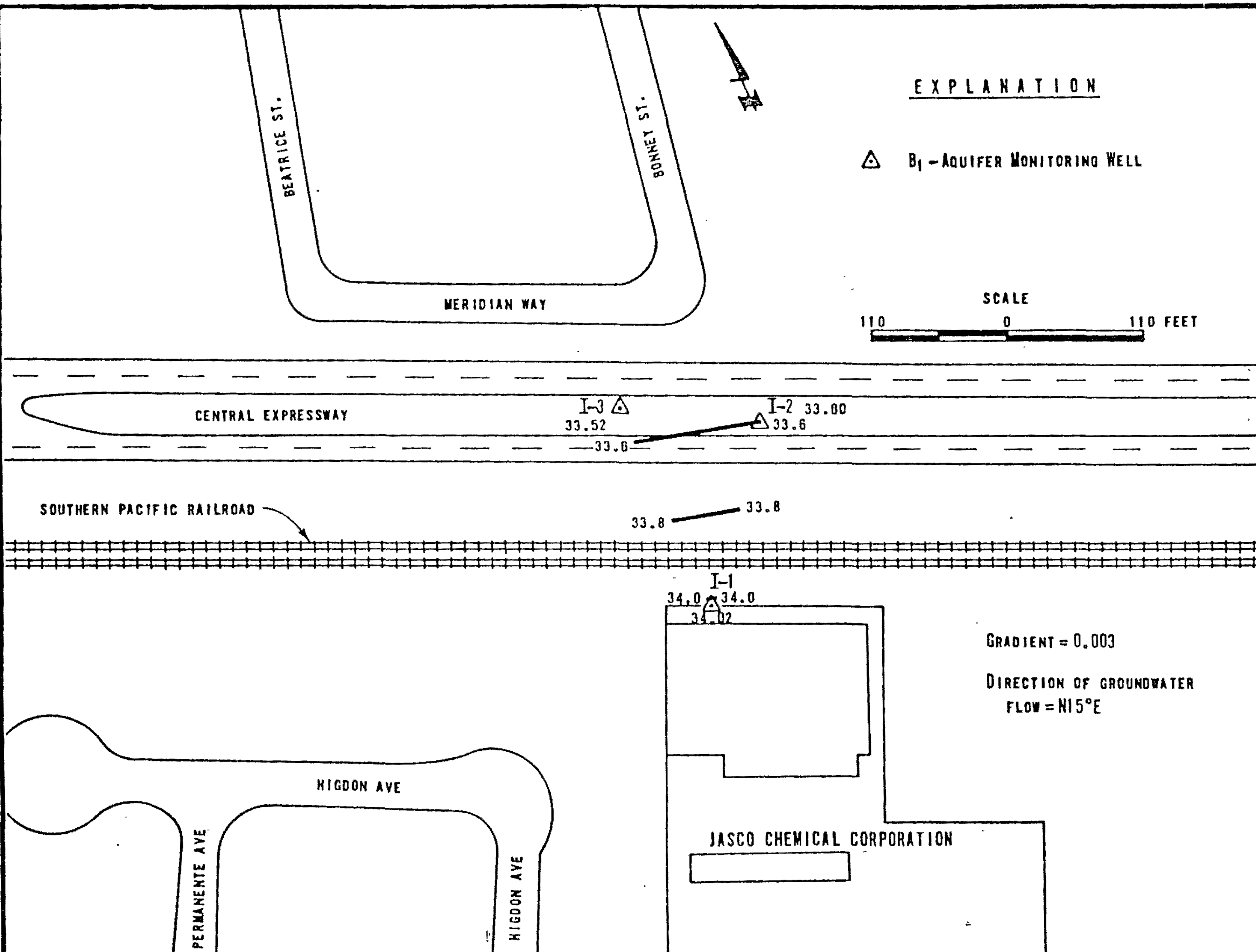


Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER-TESTING REPORT PALO ALTO • CALIFORNIA	GEOLOGIC CROSS SECTION D-D'	
	PROJECT NO.	DATE	FIGURE NO.
	JCO-104H	DECEMBER 1987	5



Wahler Associates
JASCO CHEMICAL CORPORATION
AQUIFER-TESTING REPORT
PALO ALTO • CALIFORNIA
POTENTIOMETRIC SURFACE A-AQUIFER
OCTOBER 7, 1987
PROJECT NO.
JCO-104H
DATE
DECEMBER 1987
FIGURE NO.
6
EXPLANATION
A-AQUIFER MONITORING WELL
SCALE
110
0
110 FEET
BEATRICE ST.
BONNEY ST.
MERIDIAN WAY
CENTRAL EXPRESSWAY
SOUTHERN PACIFIC RAILROAD
HIGDON AVE
PERMANENTE AVE
HIGDON AVE
JASCO CHEMICAL CORPORATION
V-7
33.54
33.8
33.8
V-8
33.85
33.8
33.8
34.0
34.0
V-2
V-4
34.11
34.07
V-5
34.14
34.2
34.2
34.4
34.4
V-3
34.50
V-1
34.58
GRADIENT = 0.004
DIRECTION OF GROUNDWATER FLOW = N30°E

154W



Wahler Associates

JASCO CHEMICAL CORPORATION
AQUIFER-TESTING REPORT
PALO ALTO • CALIFORNIA

POTENTIOMETRIC SURFACE - B_1 AQUIFER
OCTOBER 7, 1987

PROJECT NO.	DATE	FIGURE NO.
JCO-104H	DECEMBER 1987	7

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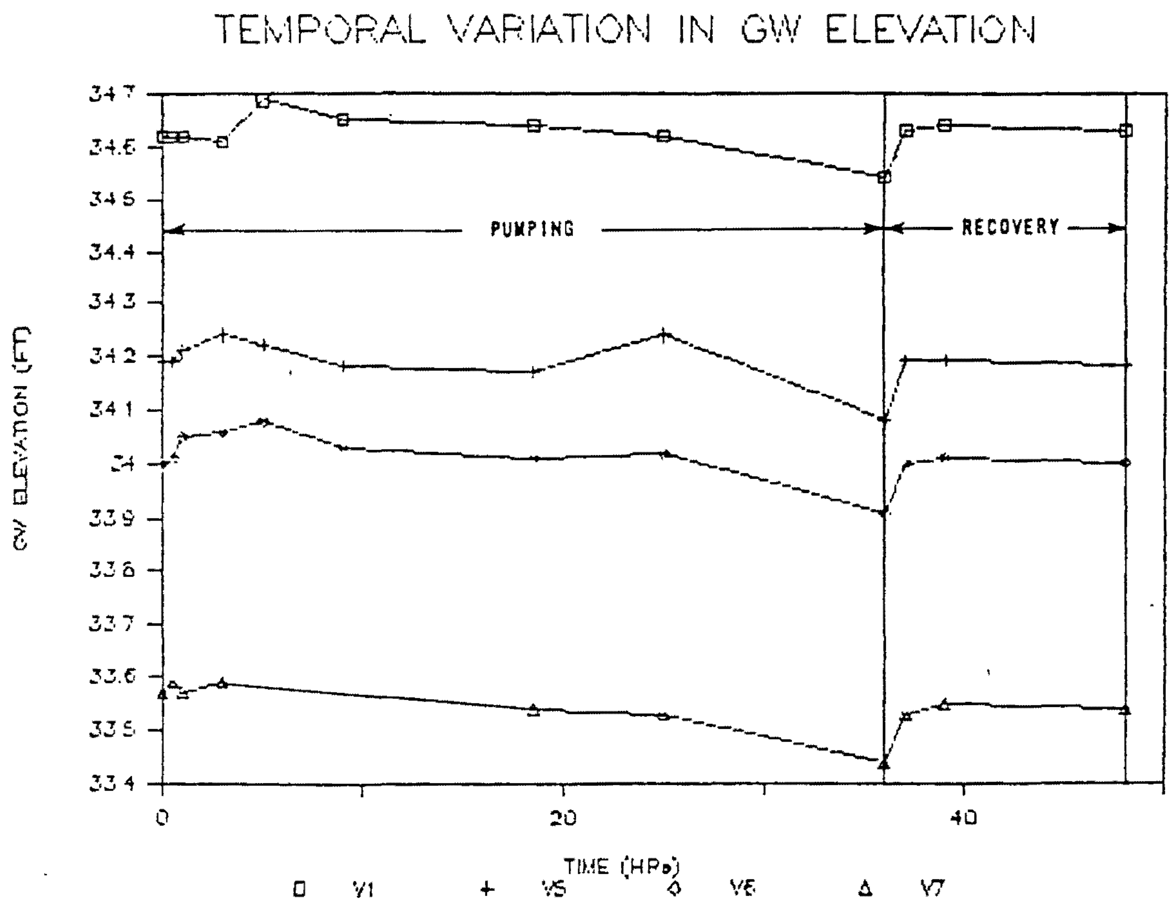
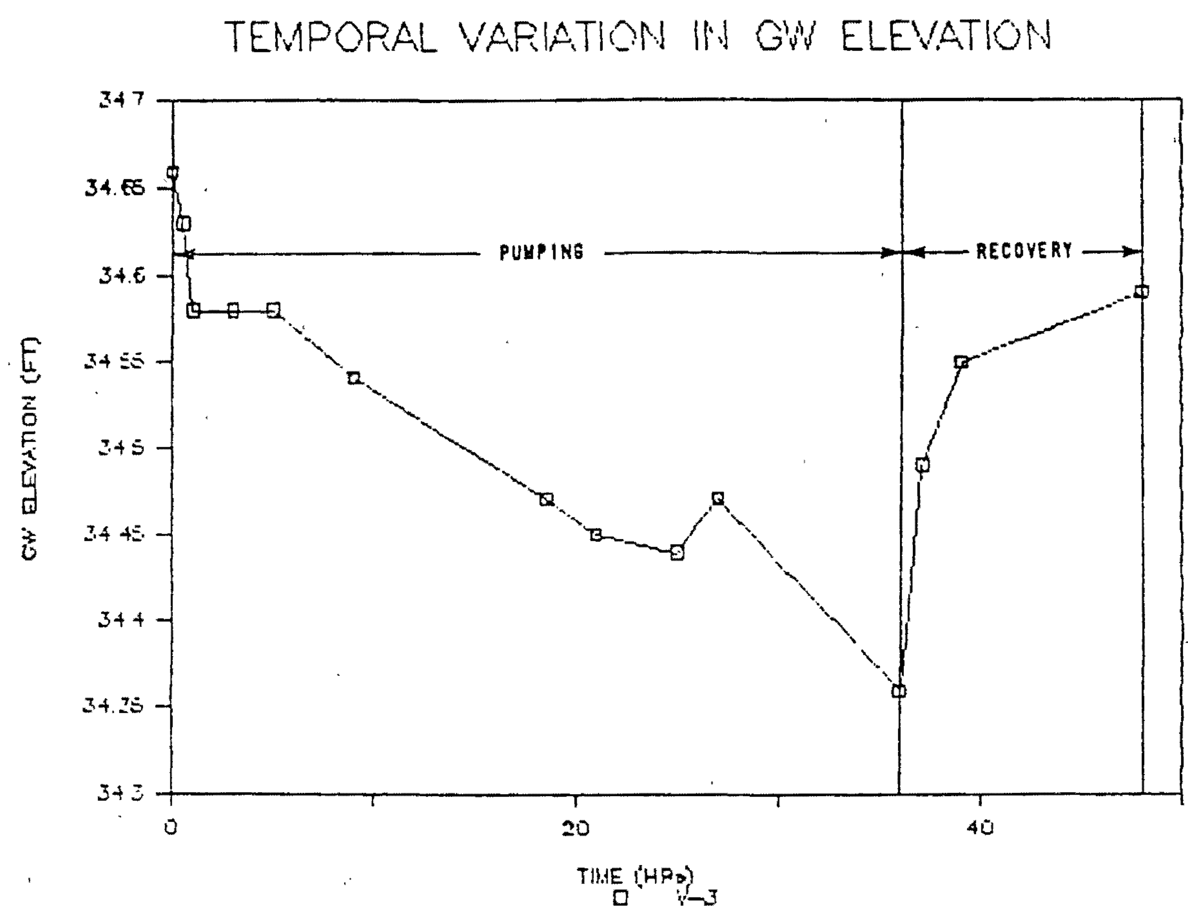
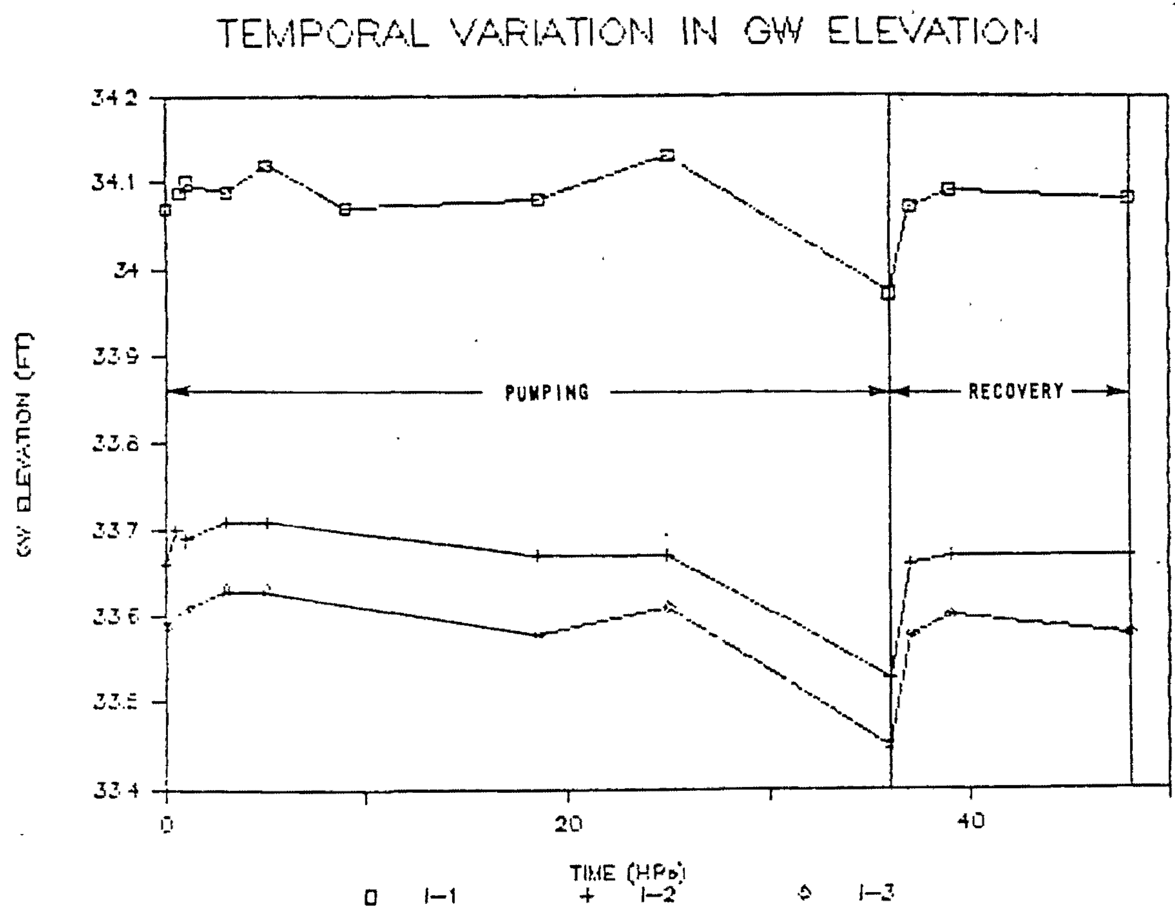


Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER – TESTING REPORT	TEMPORAL VARIATIONS IN WATER LEVELS WELLS V-1, V-5, V-6, V-7		
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO • CALIFORNIA	JCO-104H	DECEMBER 1987	8

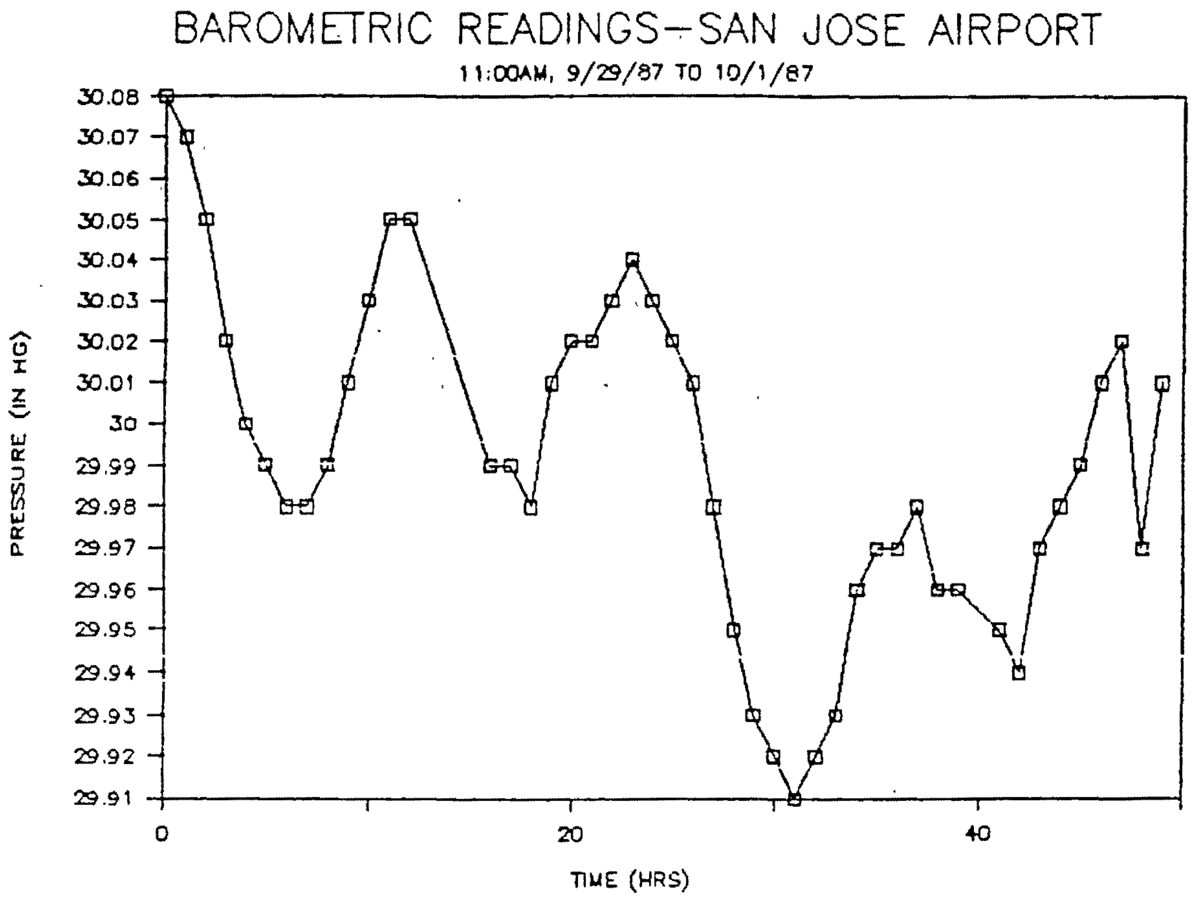


Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER-TESTING REPORT	TEMPORAL VARIATION IN WATER LEVEL WELL V-3	
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO ● CALIFORNIA	JCO-104H	DECEMBER 1987	9



Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER-TESTING REPORT PALO ALTO ● CALIFORNIA	TEMPORAL VARIATIONS IN WATER LEVELS WELLS I-1, I-2, I-3

PROJECT NO.	DATE	FIGURE NO.
JCO-104H	DECEMBER 1987	10



Wahler Associates	JASCO CHEMICAL CORPORATION AQUIFER – TESTING REPORT	BAROMETRIC PRESSURE READINGS AT SAN JOSE INTERNATIONAL AIRPORT	
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO ● CALIFORNIA	JCO-184H	DECEMBER 1987	11

APPENDIX A

APPENDIX A

PUMPING AND SLUG TEST PROTOCOL

A. FIELD PROCEDURE

1. Slug Tests

Slug tests were performed in wells V-1 through V-7 and wells I-1, 2, and 3. This method was used because it provides a simple method of determining values of hydraulic conductivity and transmissivity for the aquifer material in the immediate vicinity of the well screen. The hydraulic conductivity data were also used to determine the degree of spatial variability in hydraulic conductivity possessed by the A-aquifer.

On September 28, 1987, a representative of Wahler Associates visited the Jasco site and conducted slug tests on ground water monitoring wells V-1 through V-7 and I-1, 2, and 3. The slug test consisted of lowering a solid "slug" of known volume into the standing water of each monitoring well which induced a rise in the water level. An electronic data logging device manufactured by Envirolabs of Glendale, California, was simultaneously used to record the decrease in water levels with time. In addition, a reverse slug test was conducted, when possible, by withdrawing the solid "slug" and recording the increase in water level with time. The rate at which the water level rises or falls is controlled by the permeability of the materials in which the monitoring well is screened.

Calculation methods used to determine values of permeabilities from slug tests are found in Appendix E. The QA protocol for the slug tests is outlined below.

2. Pumping

Procedures and equipment used for performing the step discharge and constant discharge pumping tests are described below. Eight episodes of water levels were measured six days before the step discharge test to determine the amount of temporal variation in water levels that occurs over an eight-hour period. In addition, water levels were measured immediately prior to pumping, both before and after the pumping equipment was placed into the well. At the start of pumping, water levels measurement were made at exponentially expanded intervals, beginning with five second intervals. Water levels were measured in V-4, the pumping well, as well as in well V-2, during the constant discharge test using an Envirolabs electric data logger and a calibrated pressure transducer. Well V-2 was chosen as the most closely monitored observation well due to its proximity to well V-4. Well V-2 is located just eight feet west of well V-4. Proximity was the key issue because a steep cone of depression was anticipated.

Water level measurements were taken periodically from wells V-1, V-4 through V-7 and I-1, 2, and 3 using an electric water level meter. Water level measurements were not taken as frequently from wells V-7, I-2, and I-3 compared to other wells, due to problems with gaining access to the Central Expressway at night as well as for safety reasons.

All pumping tests were conducted using a Grunfus-stainless steel submersible pump. Discharged volume was measured using an in-line flow meter. The flow meter was field checked periodically during the test by calculating the time it took to fill a bucket of known volume. No problems with the pump or flow meter were observed during the test. Extracted ground water was transferred away from the well site using a two-inch flexible hose to the sanitary sewer correction at the Jasco facility. The long-term constant discharge consisted of a 36-hour pumping period followed by a recovery period. Twelve hours of recovery were planned prior to carrying out the test. In the field, it was determined that at least 90 percent recovery had occurred after only approximately 4.5 hours. Monitoring of wells V-2 and V-4 using the data logger was discontinued at that time. A final set of water level measurements were taken 48 hours after pumping began to document the final set of recovery data.

3. Quality Assurance Protocol

The following set of quality assurance guidelines were followed during the slug and pumping tests:

- Horizontal and vertical control for the pumping well and observation wells was established by a licensed surveyor to provide a reliable basis for water level measurements and pumping test calculations.

- The performance of the pump, generator and flow meter was monitored periodically throughout the pumping test to verify the quality of measurements as well as the continuity of the test.

- All equipment was thoroughly steam-cleaned and then rinsed with clean tap water prior to being lowered down the hole.

- A representative of Wahler Associates was on-site at all times during the test to verify the reliability of the data, as well as to make sure the equipment did not malfunction.

APPENDIX B

Step Discharge Test: V-4

9-28-87

Q=1.2gpm, 2.81gpm, 2.69gpm, 2.16gpm, 2.07gpm, 6.08gpm, 4.56gpm

Time	ch	H(ft)
14:52 HRS	7	7.35
14:51 HRS	7	7.37
14:50 HRS	7	7.40
14:49 HRS	7	7.42
14:48 HRS	7	7.45
14:47 HRS	7	7.45
14:46 HRS	7	7.47
14:45 HRS	7	7.50
14:44 HRS	7	7.52
14:43 HRS	7	7.55
14:42 HRS	7	7.57
14:41 HRS	7	7.60
14:40 HRS	7	7.62
14:39 HRS	7	7.65
14:38 HRS	7	7.67
14:37 HRS	7	7.70
14:36 HRS	7	7.72
14:35 HRS	7	7.75
14:34 HRS	7	7.80
14:33 HRS	7	7.82
14:32 HRS	7	7.85
14:31 HRS	7	7.90
14:30 HRS	7	7.95
14:29 HRS	7	8.00
14:28 HRS	7	8.07
14:27 HRS	7	8.15
14:26 HRS	7	8.22
14:25 HRS	7	8.30
14:24 HRS	7	8.52
14:23 HRS	7	8.92
14:22 HRS	7	9.55
14:21 HRS	7	9.52
14:20 HRS	7	9.52
14:19 HRS	7	9.52
14:18 HRS	7	9.55
14:17 HRS	7	9.55
14:16 HRS	7	9.57
14:15 HRS	7	9.57
14:14 HRS	7	9.60
14:13 HRS	7	9.57
14:12 HRS	7	9.57
14:11 HRS	7	9.57
14:10 HRS	7	9.57
14:09 HRS	7	9.57
14:08 HRS	7	9.60
14:07 HRS	7	9.55
14:06 HRS	7	9.37
14:05 HRS	7	7.42
14:04 HRS	7	10.95
14:03 HRS	7	10.85
14:02 HRS	7	10.85
14:01 HRS	7	[illegible]
14:00 HRS	7	[illegible]
13:59 HRS	07	[illegible]

Begin test

Time	ch	H(ft)
15:53 HRS	7	9.37
15:52 HRS	7	9.22
15:51 HRS	7	9.02
15:50 HRS	7	8.70
15:49 HRS	7	7.80
15:48 HRS	7	7.07
15:47 HRS	7	6.95
15:46 HRS	7	6.80
15:45 HRS	7	6.57
15:44 HRS	7	6.17
15:43 HRS	7	5.17
15:42 HRS	7	3.20
15:41 HRS	7	2.25
15:40 HRS	7	2.42
15:39 HRS	7	2.55
15:38 HRS	7	2.62
15:37 HRS	7	2.50
15:36 HRS	7	1.82
15:35 HRS	7	2.90
15:34 HRS	7	7.85
15:33 HRS	7	7.85
15:32 HRS	7	7.82
15:31 HRS	7	7.82
15:30 HRS	7	7.82
15:29 HRS	7	7.82
15:28 HRS	7	7.82
15:27 HRS	7	7.82
15:26 HRS	7	7.80
15:25 HRS	7	7.80
15:24 HRS	7	7.80
15:23 HRS	7	7.77
15:22 HRS	7	7.77
15:21 HRS	7	7.77
15:20 HRS	7	7.75
15:19 HRS	7	7.72
15:18 HRS	7	7.70
15:17 HRS	7	7.65
15:16 HRS	7	7.57
15:15 HRS	7	7.15
15:14 HRS	7	7.17
15:13 HRS	7	7.12
15:12 HRS	7	7.12
15:11 HRS	7	7.12
15:10 HRS	7	7.15
15:09 HRS	7	7.15
15:08 HRS	7	7.15
15:07 HRS	7	7.17
15:06 HRS	7	7.17
15:05 HRS	7	7.20
15:04 HRS	7	7.20
15:03 HRS	7	7.22
15:02 HRS	7	7.22
15:01 HRS	7	7.25
15:00 HRS	7	7.25
14:59 HRS	7	7.27
14:58 HRS	7	7.27
14:57 HRS	7	7.30
14:56 HRS	7	7.30
14:55 HRS	7	7.32
14:54 HRS	7	7.32
14:53 HRS	7	7.35

Wahler Associates

STEP DRAWDOWN TEST

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : V-4 DATE: 9-28-87 PUMPED/TESTED BY: RGB/

WELL DIA.: 4" Pumping Method: Grönfus Submersible Weather: Sunny + warm

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: —

INITIAL DEPTH TO WATER: ______ INITIAL DEPTH OF OPEN WELL: ______
INITIAL HEIGHT OF WATER COLUMN IN WELL: ______

VOLUME OF 1 CASING FULL OF WATER: ______ CU. FEET
(PI x R^2 x H), IN FT^3 ______ x 7.479 = ______ GAL.

CLOCK TIME	STEP number	Volume pumped per Q-estimate (gallons)	Depth of water above probe (ft)	Q (gpm)	Meter reading (ft^3)
1347.23	1	0	10.82	—	12087.45
1406.42	1	5	9.57	—	12088.27
1410.35	1	10	9.57	1.2	12089.57
—	SAME Q	—	—	—	—
1416.45	1A	0	9.57	—	12089.97
1420.31	1A	5	9.52	1.19	1209057
1422.45	ΔQ	—	9.52	—	12090.93
1424.00	2	0	8.47	—	12091.44
1425.46	2	5	8.22	2.81	12092.10
1426.12	2	—	8.07	—	—
1456.20	2	—	7.30	—	—
1456.30	ΔQ	—	-	—	-
1457.00	3	0	7.27	—	12103.24
1500.00	3	8	7.22	2.69	12104.32
1504.30	3	—	7.20	—	12106.94
1509.30	3A	0	7.15	—	12107.72
1512.30	3A	8	7.12	2.71	12108.79
—	ΔQ	—	—	—	—
1516.30	4	0	7.65	—	12110.06
1519.30	4	6.5	7.77	2.16	12110.93

NO. OF CASINGS FULL PUMPED: ______ ◯ - water level is stable

Depth Sampled: ______

SAMPLES TAKEN: ______

PRESERVATIVE:

Wahler Associates

STEP DRAWDOWN TEST

WELL PUMPING/TESTING DATA SHEET

JOB NO.: JCO-104H WELL NO.: V-4 DATE: 8-28-87 PUMPED/TESTED BY: RGB/L

WELL DIA.: 4" Pumping Method: Grunfos Submersible Weather: Sunny + warm

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: —

INITIAL DEPTH TO WATER: ______ INITIAL DEPTH OF OPEN WELL: ______

INITIAL HEIGHT OF WATER COLUMN IN WELL: ______

VOLUME OF 1 CASING FULL OF WATER: ______ CU. FEET

($PI \times R^2 \times H$), IN FT^3 ______ x 7.479 = ______ GAL.

CLOCK TIME	STEP Number	volume pumped per Q-Estimate (gallons)	Depth of water above Probe (ft)	Q (gpm)	meter reading (ft^3)
1527.00	5	0	7.82	—	12112.96
1530.00	5	6.2	7.82	2.07	12113.79
15330.30	5	—	7.82	—	12114.75
—	ΔQ	—	—	—	—
1537.30	6	0	7.72	—	12118.23
1540.30	6	18.25	2.51	6.08	12120.67
—	ΔQ	—	—	—	—
1543.15	7	0	6.82	—	12121.04
1546.15	7	13.7	6.90	4.56	12122.87

Conclusion:
pump at 2.0-2.2gpm
During Constant Discharge
test

NO. OF CASINGS FULL PUMPED: ______

Depth Sampled: ______

SAMPLES TAKEN: ______

Step - Drawdown Test

Jacob Solution (1946):

$$s = \underbrace{BQ}_{\text{Av. head loss}} + \underbrace{CQ^2}_{\text{Well head loss}}$$

s – drawdown in well, ft
Q – discharge rate, ft^3/min
B – constant
C – well loss coefficient

By Bierschenk's method of analysis (Driscoll, 1986):

$$\frac{s}{Q} = B + CQ$$

plot s/Q vs. Q } Two data points chosen:
$Q_1 = 1.2$ gpm $= 0.16$ ft^3/min
$Q_2 = 2.7$ gpm $= 0.36$ ft^3/min

Q (ft^3/min)	s (ft)	s / Q (min/ft^2)
$Q_1 = 0.16$	$s_1 = 1.33$	$s_1/Q_1 = 8.31$
$Q_2 = 0.36$	$s_2 = 3.73$	$s_2/Q_2 = 10.36$

From graph: $\boxed{\begin{aligned} B &= 6.6 \ min/ft^2 \\ C &= 10.25 \ min^2/ft^5 \end{aligned}}$

Wahler Associates

CALCULATION SHEET

SHEET 2 OF 2 SHEETS

PROJECT ______ PROJECT NO. JCO-104H

SUBJECT Step- Drawdown Test

FILE ______

CALCULATED BY D.S. CHECKED BY A.C. DATE 9/28/87

$$\therefore \boxed{s = 6.6\,Q + 10.25\,Q^2}$$

Check

$Q_1 = 0.16\ ft^3/min$

$s = (6.6\ min/ft^2)(.16\ ft^3/min) + (10.25\ min^2/ft^5)(0.0256\ ft^6/min^2)$

$s_1 = 1.06' + 0.26' = 1.32'$ → similar to what measured.

$Q_2 = 0.36\ ft^3/min$

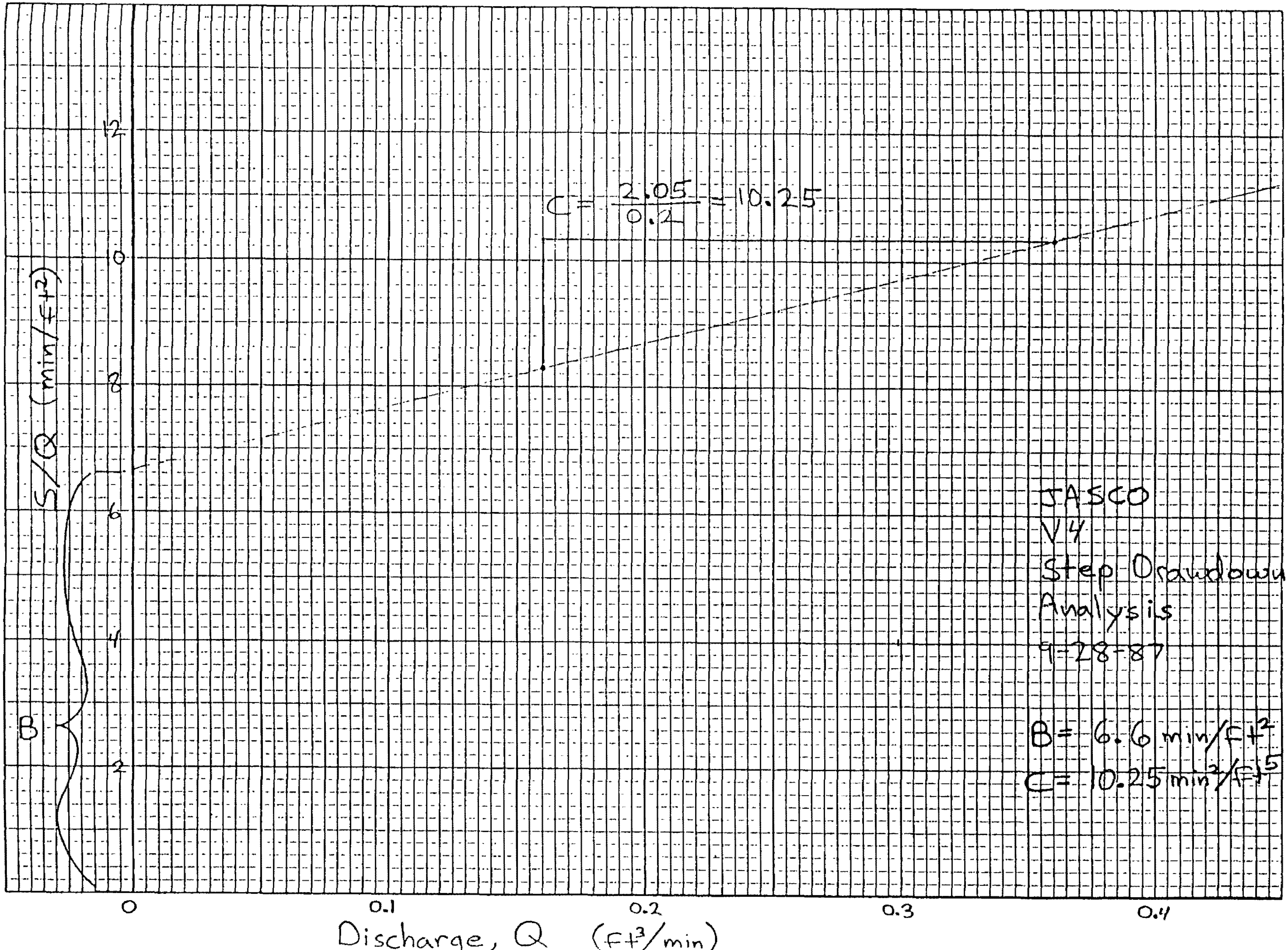
$s_2 = (6.6\ min/ft^2)(.36\ ft^3/min) + (10.25\ min^2/ft^5)(0.1296\ ft^6/min^2)$

$s_2 = 2.38' + 1.33' = 3.71'$

When $Q = 2\ gpm$ $(0.27\ ft^3/min)$

$s = 6.6 \times 0.27 + 10.25 \times (0.27)^2$

$\underline{s = 2.53'}$ desirable drawdown



C = 2.05 / 0.2 = 10.25
S/Q (min/ft²)
12
10
8
6
4
2
B
0
0.1
0.2
0.3
0.4
Discharge, Q (ft³/min)
JASCO
V4
Step Drawdown
Analysis
9-28-87
B = 6.6 min/ft²
C = 10.25 min²/ft⁵

APPENDIX C

CONSTANT-DISCHARGE TEST DATA AND CALCULATIONS

Methods of Analysis

1. Hantush-Jacob Method (1955):

General equation for leaky confined aquifer:

$$T = \frac{Q}{4\pi s} W(u, r/B)$$

s - drawdown
Q - discharge rate
T - transmissivity
W(u,r/B) - well function

dimensionless parameter $\quad r/B = r\sqrt{\frac{K'}{K_1 b_1 b'}}$

K' - hydraulic conductivity of the leaky aquitard

K_1 - hydraulic conductivity of the aquifer being tested

b' - thickness of the leaky aquitard

b_1 - thickness of the aquifer being tested

assumptions

- The aquifer is confined on top and bottom by aquitards. One of the aquitards may be leaky.
- The aquifer is level and infinte in horizontal extent.
- The aquifer is homogeneous and isotropic
- The pumping well fully penetrates the aquifer.
- Discharge from the well is at a constant rate.
- There is no storage within the well itself.
- The storativity of the leaky aquitard is zero.

2. Jacob Straight Line Method (Freeze and Cherry, 1979):

$$T = \frac{2.3\ Q}{4\pi\ \Delta(h_o - h)} \quad ; \quad S = \frac{2.25\ T t_o}{r^2}$$

T - transmissivity (ft^2/min)

S - storativity

Q - discharge rate (ft^3/min)

r - radial distance from pumping to observation well (ft)

$\Delta(h_0-h)$ - drawdown for one log cycle of time

t_0 - time intercept on semi-log plot

assumptions and limitations:

- Assumptions are similar to those of Hantush and Jacob method
- this method is well suited to the analysis of bounded confined aquifers and small r, i.e., observation well close to pumping well.

3. Theis non-equilibrium equation modified by Cooper and Jacob (1946) for Recovery Data (Driscoll, 1986):

$$T = \frac{Q}{4\pi(s_1-s_2)} \ln\left(\frac{(t_1/t_1')}{(t_2/t_2')}\right)$$

T - transmissivity (ft^2/min)

Q - discharge rate (ft^3/min)

$s_{1,2}$ - residual drawdown (ft)

$t_{1,2}$ - time since pumping began (min)

$t'_{1,2}$ - time since pumping stopped (min)

4. Determining Hydraulic Conductivity:

$$K = T/b$$

K - hydraulic conductivity (ft/min)

T - transmissivity (ft^2/min)

b - aquifer thickness (ft)

5. Determining Seepage Velocity:
By Darcy's Law,

$$v = K \cdot \frac{dh}{dl} \cdot \frac{1}{n}$$

v - seepage velocity (ft/min)

K - hydraulic conductivity

$\frac{dh}{dl}$ - hydraulic gradient

n - effective porosity

Constant Discharge Pumping Test: V-4
9/29-30, 10/1/87
Q=2.07gpm, 2.40gpm

	V-4		V-2	
Time	Ch	H(ft)	ch	H(ft)
12:06:20	7	9.00	8	4.52
12:06:10	7	9.00	8	4.55
12:06:00	7	9.02	8	4.55
12:05:50	7	9.02	8	4.55
12:05:40	7	9.02	8	4.57
12:05:30	7	9.05	8	4.57
12:05:20	7	9.05	8	4.60
12:05:10	7	9.07	8	4.60
12:05:00	7	9.10	8	4.62
12:04:50	7	9.10	8	4.62
12:04:40	7	9.10	8	4.62
12:04:30	7	9.12	8	4.65
12:04:20	7	9.15	8	4.67
12:04:10	7	9.15	8	4.67
12:04:00	7	9.17	8	4.70
12:03:50	7	9.17	8	4.70
12:03:40	7	9.20	8	4.72
12:03:30	7	9.22	8	4.75
12:03:20	7	9.22	8	4.77
12:03:10	7	9.25	8	4.77
12:03:00	7	9.27	8	4.80
12:02:50	7	9.30	8	4.82
12:02:40	7	9.32	8	4.85
12:02:30	7	9.35	8	4.87
12:02:20	7	9.37	8	4.90
12:02:10	7	9.40	8	4.92
12:02:00	7	9.42	8	4.95
12:01:55	7	9.45	8	4.97
12:01:50	7	9.47	8	4.97
12:01:45	7	9.47	8	5.00
12:01:40	7	9.50	8	5.00
12:01:35	7	9.52	8	5.02
12:01:30	7	9.55	8	5.05
12:01:25	7	9.57	8	5.05
12:01:20	7	9.60	8	5.07
12:01:15	7	9.62	8	5.10
12:01:10	7	9.65	8	5.10
12:01:05	7	9.67	8	5.12
12:01:00	7	9.70	8	5.15
12:00:55	7	9.75	8	5.17
12:00:50	7	9.80	8	5.17
12:00:45	7	9.82	8	5.20
12:00:40	7	9.87	8	5.22
12:00:35	7	9.95	8	5.25
12:00:30	7	10.00	8	5.27
12:00:25	7	10.07	8	5.27
12:00:20	7	10.17	8	5.30
12:00:15	7	10.27	8	5.32
12:00:10	7	10.40	8	5.35
12:00:05	7	10.57	8	5.35
12:00:00	7	10.80	8	5.35

15:54 -45 87 09 [illegible] #19

Begin test

	V-4		V-2	
Time	ch	H(ft)	ch	H(ft)
12:56:00	7	8.35	8	4.02
12:55:00	7	8.37	8	4.02
12:54:00	7	8.37	8	4.02
12:53:00	7	8.37	8	4.02
12:52:00	7	8.37	8	4.02
12:51:00	7	8.37	8	4.02
12:50:00	7	8.37	8	4.02
12:49:00	7	8.40	8	4.02
12:48:00	7	8.40	8	4.02
12:47:00	7	8.40	8	4.05
12:46:00	7	8.40	8	4.02
12:45:00	7	8.40	8	4.02
12:44:00	7	8.42	8	4.05
12:43:00	7	8.42	8	4.05
12:42:00	7	8.42	8	4.05
12:41:00	7	8.42	8	4.05
12:40:00	7	8.45	8	4.05
12:39:00	7	8.45	8	4.05
12:38:00	7	8.47	8	4.07
12:37:00	7	8.47	8	4.07
12:36:00	7	8.47	8	4.07
12:35:00	7	8.47	8	4.07
12:34:00	7	8.50	8	4.07
12:33:00	7	8.50	8	4.07
12:32:00	7	8.50	8	4.10
12:31:00	7	8.52	8	4.10
12:30:00	7	8.52	8	4.10
12:29:00	7	8.52	8	4.10
12:28:00	7	8.55	8	4.12
12:27:00	7	8.55	8	4.12
12:26:00	7	8.55	8	4.15
12:25:00	7	8.57	8	4.15
12:24:00	7	8.57	8	4.15
12:23:00	7	8.60	8	4.17
12:22:00	7	8.60	8	4.17
12:21:00	7	8.62	8	4.20
12:20:00	7	8.65	8	4.20
12:19:00	7	8.65	8	4.22
12:18:00	7	8.67	8	4.22
12:17:00	7	8.67	8	4.25
12:16:00	7	8.70	8	4.25
12:15:00	7	8.72	8	4.27
12:14:00	7	8.72	8	4.27
12:13:00	7	8.75	8	4.30
12:12:00	7	8.77	8	4.32
12:11:00	7	8.80	8	4.35
12:10:00	7	8.82	8	4.37
12:09:00	7	8.87	8	4.42
12:08:00	7	8.90	8	4.45
12:07:00	7	8.95	8	4.50
12:06:50	7	8.97	8	4.50
12:06:40	7	8.97	8	4.50
12:06:30	7	8.97	8	4.52

Constant Discharge pumping test: V-4 (continued)
9/29-30, 10/1/87
Q=2.07gpm, 2.40gpm

	V-4		V-2	
Time	ch	H(ft)	ch	H(ft)
16:07:00	7	7.82	8	3.85
16:03:00	7	7.80	8	3.85
15:59:00	7	7.82	8	3.85
15:55:00	7	7.82	8	3.85
15:51:00	7	7.82	8	3.85
15:47:00	7	7.82	8	3.85
15:43:00	7	7.82	8	3.85
15:39:00	7	7.85	8	3.85
15:35:00	7	7.85	8	3.85
15:31:00	7	7.87	8	3.85
15:27:00	7	7.87	8	3.85
15:23:00	7	7.90	8	3.87
15:19:00	7	7.90	8	3.87
15:15:00	7	7.90	8	3.87
15:11:00	7	7.92	8	3.87
15:07:00	7	7.92	8	3.87
15:03:00	7	7.95	8	3.87
-14:59:00	7	7.95	8	3.87
14:55:00	7	7.97	8	3.87
14:51:00	7	8.00	8	3.90
14:47:00	7	8.05	8	3.92
14:43:00	7	7.97	8	3.90
14:39:00	7	8.00	8	3.90
14:35:00	7	8.00	8	3.90
14:31:00	7	8.00	8	3.90
14:27:00	7	8.02	8	3.90
14:23:00	7	8.02	8	3.90
14:19:00	7	8.05	8	3.90
14:15:00	7	8.05	8	3.90
14:11:00	7	8.07	8	3.92
14:07:00	7	8.07	8	3.92
14:03:00	7	8.10	8	3.92
-13:59:00	7	8.10	8	3.92
13:55:00	7	8.10	8	3.92
13:51:00	7	8.12	8	3.92
13:47:00	7	8.15	8	3.95
13:43:00	7	8.15	8	3.95
13:39:00	7	8.15	8	3.95
13:35:00	7	8.17	8	3.95
13:31:00	7	8.20	8	3.97
13:27:00	7	8.20	8	3.97
13:23:00	7	8.22	8	3.97
13:19:00	7	8.25	8	3.97
13:15:00	7	8.27	8	4.00
13:11:00	7	8.27	8	4.00
13:07:00	7	8.30	8	4.00
13:06:00	7	8.30	8	4.00
13:05:00	7	8.30	8	4.00
13:04:00	7	8.32	8	4.00
13:03:00	7	8.32	8	4.00
13:02:00	7	8.32	8	4.00
13:01:00	7	8.32	8	4.00
13:00:00	7	8.32	8	4.00
12:59:00	7	8.32	8	4.00
12:58:00	7	8.35	8	4.02
12:57:00	7	8.35	8	4.02

	V-4			V-2
Time	ch	H(ft)		V-2
STATION ID = 04			ch	H(ft)
19:43:00	7	7.47	8	3.75
19:39:00	7	7.50	8	3.77
19:35:00	7	7.50	8	3.77
19:31:00	7	7.50	8	3.77
19:27:00	7	7.50	8	3.75
19:23:00	7	7.50	8	3.77
19:19:00	7	7.52	8	3.77
19:15:00	7	7.52	8	3.77
19:11:00	7	7.52	8	3.75
19:07:00	7	7.47	8	3.77
19:03:00	7	7.55	8	3.77
18:59:00	7	7.55	8	3.77
18:55:00	7	7.55	8	3.77
18:51:00	7	7.55	8	3.77
18:47:00	7	7.57	8	3.80
18:43:00	7	7.57	8	3.77
18:39:00	7	7.57	8	3.77
18:35:00	7	7.57	8	3.77
18:31:00	7	7.57	8	3.77
18:27:00	7	7.60	8	3.80
18:23:00	7	7.60	8	3.80
18:19:00	7	7.60	8	3.80
18:15:00	7	7.60	8	3.80
18:11:00	7	7.62	8	3.80
18:07:00	7	7.62	8	3.80
18:03:00	7	7.62	8	3.80
17:59:00	7	7.62	8	3.80
17:55:00	7	7.65	8	3.80
17:51:00	7	7.65	8	3.80
17:47:00	7	7.65	8	3.80
17:43:00	7	7.65	8	3.80
17:39:00	7	7.65	8	3.80
17:35:00	7	7.67	8	3.82
17:31:00	7	7.67	8	3.82
17:27:00	7	7.67	8	3.82
17:23:00	7	7.67	8	3.82
17:19:00	7	7.70	8	3.82
17:15:00	7	7.70	8	3.82
17:11:00	7	7.70	8	3.82
17:07:00	7	7.70	8	3.82
17:03:00	7	7.72	8	3.82
16:59:00	7	7.72	8	3.82
16:55:00	7	7.75	8	3.82
16:51:00	7	7.72	8	3.82
16:47:00	7	7.72	8	3.82
16:43:00	7	7.72	8	3.82
16:39:00	7	7.72	8	3.82
16:35:00	7	7.75	8	3.85
16:31:00	7	7.77	8	3.85
16:27:00	7	7.77	8	3.85
16:23:00	7	7.77	8	3.85
16:19:00	7	7.77	8	3.85
16:15:00	7	7.80	8	3.85
16:11:00	7	7.80	8	3.85

Constant Discharge test recovery data: V-4

10-1-87

	V-4		V-2			V-4		V-2	
Time	ch	H(ft)	ch	H(ft)	Time	ch	H(ft)	ch	H(ft)
00:16:21	7	9.90	8	4.57	01:42:21	7	10.65	8	5.32
00:15:21	7	9.87	8	4.52	01:38:21	7	10.65	8	5.32
00:14:21	7	9.82	8	4.50	01:34:21	7	10.62	8	5.32
00:13:21	7	9.77	8	4.45	01:30:21	7	10.62	8	5.30
00:12:21	7	9.72	8	4.37	01:26:21	7	10.60	8	5.27
00:11:21	7	9.65	8	4.32	01:22:21	7	10.60	8	5.27
00:10:21	7	9.55	8	4.25	01:18:21	7	10.57	8	5.25
00:10:11	7	9.52	8	4.22	01:14:21	7	10.55	8	5.22
00:10:01	7	9.50	8	4.22	01:10:21	7	10.55	8	5.22
00:09:51	7	9.47	8	4.20	01:09:21	7	10.52	8	5.22
00:09:41	7	9.45	8	4.17	01:08:21	7	10.52	8	5.20
00:09:31	7	9.42	8	4.17	01:07:21	7	10.52	8	5.20
00:09:21	7	9.42	8	4.15	01:06:21	7	10.52	8	5.20
00:09:11	7	9.40	8	4.15	01:05:21	7	10.52	8	5.20
00:09:01	7	9.37	8	4.12	01:04:21	7	10.50	8	5.20
00:08:51	7	9.35	8	4.10	01:03:21	7	10.50	8	5.17
00:08:41	7	9.35	8	4.10	01:02:21	7	10.50	8	5.17
00:08:31	7	9.32	8	4.07	01:01:21	7	10.50	8	5.17
00:08:21	7	9.30	8	4.05	01:00:21	7	10.47	8	5.17
00:08:11	7	9.27	8	4.05	00:59:21	7	10.47	8	5.15
00:08:01	7	9.27	8	4.02	00:58:21	7	10.47	8	5.15
00:07:51	7	9.22	8	4.00	00:57:21	7	10.47	8	5.15
00:07:41	7	9.22	8	3.97	00:56:21	7	10.45	8	5.15
00:07:31	7	9.17	8	3.95	00:55:21	7	10.45	8	5.12
00:07:21	7	9.17	8	3.92	00:54:21	7	10.45	8	5.12
00:07:11	7	9.12	8	3.90	00:53:21	7	10.45	8	5.12
00:07:01	7	9.10	8	3.87	00:52:21	7	10.42	8	5.12
00:06:51	7	9.07	8	3.85	00:51:21	7	10.42	8	5.10
00:06:41	7	9.02	8	3.82	00:50:21	7	10.42	8	5.10
00:06:31	7	9.00	8	3.80	00:49:21	7	10.42	8	5.10
00:06:21	7	8.95	8	3.77	00:48:21	7	10.40	8	5.07
00:04:11	7	8.92	8	3.75	00:47:21	7	10.40	8	5.07
00:06:01	7	8.87	8	3.70	00:46:21	7	10.40	8	5.07
00:05:51	7	8.82	8	3.67	00:45:21	7	10.37	8	5.05
00:05:41	7	8.77	8	3.65	00:44:21	7	10.37	8	5.05
00:05:31	7	8.70	8	3.62	00:43:21	7	9.97	8	5.05
00:05:21	7	8.65	8	3.57	00:42:21	7	10.35	8	5.02
00:05:16	7	8.60	8	3.57	00:41:21	7	10.35	8	5.02
00:05:11	7	8.57	8	3.55	00:40:21	7	10.35	8	5.02
00:05:06	7	8.52	8	3.52	00:39:21	7	10.32	8	5.00
00:05:01	7	8.47	8	3.52	00:38:21	7	10.32	8	5.00
00:04:56	7	8.42	8	3.50	00:37:21	7	10.30	8	4.97
00:04:51	7	8.35	8	3.47	00:36:21	7	10.30	8	4.97
00:04:46	7	8.27	8	3.47	00:35:21	7	10.27	8	4.95
00:04:41	7	8.22	8	3.45	00:34:21	7	10.27	8	4.95
00:04:36	7	8.12	8	3.42	00:33:21	7	10.25	8	4.92
00:04:31	7	8.05	8	3.42	00:32:21	7	10.25	8	4.92
00:04:26	7	7.95	8	3.40	00:31:21	7	10.22	8	4.90
00:04:21	7	7.85	8	3.40	00:30:21	7	10.22	8	4.90
00:04:16	7	7.72	8	3.37	00:29:21	7	10.20	8	4.87
00:04:11	7	7.60	8	3.35	00:28:21	7	10.17	8	4.85
00:04:06	7	7.47	8	3.35	00:27:21	7	10.17	8	4.85
00:04:01	7	7.30	8	3.32	00:26:21	7	10.15	8	4.82
00:03:56	7	7.15	8	3.32	00:25:21	7	10.12	8	4.80
00:03:51	7	6.95	8	3.30	00:24:21	7	10.12	8	4.80
00:03:46	7	6.75	8	3.30	00:23:21	7	10.10	8	4.77
00:03:41	7	6.52	8	3.30	00:22:21	7	10.07	8	4.75
00:03:36	7	6.27	8	3.30	00:21:21	7	10.05	8	4.72
00:03:31	7	6.00	8	3.30	00:20:21	7	10.02	8	4.70
00:03:26	7	5.92	8	3.30	00:19:21	7	10.00	8	4.67
00:03:21	7	5.92	8	3.30	00:18:21	7	9.97	8	4.65
00:00 HPS 87/10/01 #19					00:17:21	7	9.92	8	4.60

Begin recovery

Constant Discharge test Recovery Data: V-4 (continued)

10-1-87

Time	V-4 ch	V-4 H(ft)	V-2 ch	V-2 H(ft)
04:38:21	7	10.85	8	5.55
04:34:21	7	10.85	8	5.55
04:30:21	7	10.85	8	5.55
04:26:21	7	10.85	8	5.55
04:22:21	7	10.85	8	5.55
04:18:21	7	10.85	8	5.52
04:14:21	7	10.85	8	5.55
04:10:21	7	10.82	8	5.52
04:06:21	7	10.85	8	5.52
04:02:21	7	10.85	8	5.52
03:58:21	7	10.82	8	5.52
03:54:21	7	10.82	8	5.52
03:50:21	7	10.82	8	5.52
03:46:21	7	10.82	8	5.52
03:42:21	7	10.82	8	5.52
03:38:21	7	10.82	8	5.52
03:34:21	7	10.82	8	5.50
03:30:21	7	10.82	8	5.50
03:26:21	7	10.80	8	5.50
03:22:21	7	10.80	8	5.50
03:18:21	7	10.80	8	5.50
03:14:21	7	10.80	8	5.50
03:10:21	7	10.80	8	5.47
03:06:21	7	10.80	8	5.47
03:02:21	7	10.80	8	5.47
02:58:21	7	10.80	8	5.47
02:54:21	7	10.77	8	5.47
02:50:21	7	10.77	8	5.45
02:46:21	7	10.77	8	5.45
02:42:21	7	10.77	8	5.45
02:38:21	7	10.77	8	5.45
02:34:21	7	10.75	8	5.42
02:30:21	7	10.75	8	5.42
02:26:21	7	10.75	8	5.42
02:22:21	7	10.75	8	5.42
02:18:21	7	10.72	8	5.40
02:14:21	7	10.72	8	5.40
02:10:21	7	10.72	8	5.40
02:06:21	7	10.72	8	5.40
02:02:21	7	10.70	8	5.37
01:58:21	7	10.70	8	5.37
01:54:21	7	10.67	8	5.35
01:50:21	7	10.67	8	5.35
01:46:21	7	10.67	8	5.35

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO.: JCC-1041H WELL NO.: V-4 DATE: 9/29,30,10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 4" Pumping Method: Grünfus Submersible Weather: Sunny + warm.

REFERENCE POINT: Pressure Transducer / Top of Protective Casing REFERENCE ELEVATION: ?/ 58.54'

INITIAL DEPTH TO WATER: 24.40 INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 10.6'

VOLUME OF 1 CASING FULL OF WATER: 0.23 CU. FEET

(PI x R^2 x H), IN FT^3 0.23 x 7.479 = 1.73 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_o - h)$	COMMENTS & OBSERVATIONS
1109.54	0	0	24.40	h_o	measured w/ M-Scope 9/29
1131.00	0	0	10.97	$-h_o$	depth of H_2O above Transducer
1200.00	0	0	10.82		Begin test. at 12:00
					WATER LEVELS
					RECORDED USING
					DATA LOGGER
0100	37	4566.38	10.55		depth of H_2O above Transducer
0300	39	4566.38	10.80		depth of H_2O above Transducer
1148.40	48	4566.38	24.52		measured w/ M-Scope

NO. OF CASINGS FULL PUMPED:

Depth Sampled:

SAMPLES TAKEN:

PRESERVATIVE:

NOTE: 24.40' = 10.97' = STATIC recorded on Channel 7

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : V-4 DATE: 9/29,30, 10/1/87 PUMPED/TESTED BY: ROB/DS

WELL DIA.: 4" Pumping Method: Grinfos Submersible Weather: Sunny + warm.

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: —

INITIAL DEPTH TO WATER: 24.40 INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 10.6'

VOLUME OF 1 CASING FULL OF WATER: 0.23 CU. FEET

(PI x R^2 x H), IN FT^3 0.23 x 7.479 = 1.73 GAL.

INITIAL METER READING = 12126.17

CLOCK TIME	TIME ELAPSED	METER READING (ft^3)	DEPTH OF WATER ABOVE PROBE (FEET)	Q (cfs)	COMMENTS & OBSERVATIONS
1605.30	4 hours	12189.13	7.80	2.04	9/29
1750.45	5	12205.71	7.72	2.02	
1800.30	6	12224.69	7.62	2.07	
1900.30	7	12241.05	7.52	2.02	
2000.45	8	12257.50	7.45	2.04	
2100.45	9	12273.86	7.37	2.02	
2158.30	10	12289.61	7.32	2.02	
2259.30	11	12306.20	7.25	2.07	
2357.30	12	12322.94	7.25	2.09	9/30
NO DATA	13	NO DATA	NO DATA	NO DATA	
0203.30	14	12356.08	7.17	1.99	
NO DATA	15	NO DATA	NO DATA	NO DATA	
0402.30	16	12388.16	7.10	2.02	
NO DATA	17	NO DATA	NO DATA	NO DATA	
0601.30	18	12420.23	7.02	2.02	
0704.00	19	12437.05	6.97	2.02	
0758.00	20	12451.57	6.92	1.99	
0900.00	21	12468.23	6.87	2.02	
0958.00	22	12483.815	6.85	2.01	
1105.00	23	12501.60	6.80	1.98	

NO. OF CASINGS FULL PUMPED: 2648.78 = 4582.40 gal NOTE: 10.97 = Static

Depth Sampled: —

SAMPLES TAKEN: — Total Drawdown = 10.97 − 5.92 = 5.05'

PRESERVATIVE: — Recorded on Channel 7

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO.: JCC-104H WELL NO.: U-4 DATE: 9/29-30,10/1/87 PUMPED/TESTED BY: RGB

WELL DIA.: 4" Pumping Method: Grunfos Submersible Weather: Sunny & warm

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: —

INITIAL DEPTH TO WATER: 24.40 INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 10.6'

VOLUME OF 1 CASING FULL OF WATER: 0.23 CU. FEET

(PI x R^2 x H), IN FT^3 0.23 x 7.479 = 1.73 GAL.

CLOCK TIME	TIME ELAPSED	METER READING (cfs)	Depth of water above probe (ft)	Q (cfs)	COMMENTS & OBSERVATIONS
1200.00	24	12516.38	6.77	2.01	
1300.00	25	12532.51	6.82	2.01	
1359.00	26	12551.91	6.25*	2.41*	Q increased at 1315
1500.00	27	12569.79	6.17	2.23	
1604.00	28	12589.94	6.17	2.35	
1700.00	29	12607.54	6.12	2.35	
1800.00	30	12626.39	6.10	2.35	
1900.00	31	12645.20	6.07	2.34	
2000.00	32	12663.95	6.02	2.34	
2100.00	33	12682.06	6.00	2.33	
2200.00	34	12701.37	6.00	2.33	
2300.00	35	12720.07	5.97	2.33	
2400.00	36	12738.79	5.92	2.33	END OF PUMPING 10/1

NO. OF CASINGS FULL PUMPED: Note: 10.97 = static

Depth Sampled: — Total Drawdown = 10.97 - 5.92 = 5.05'

SAMPLES TAKEN: — recorded on Channel 7

PRESERVATIVE: —

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : V-2 DATE: 9/29-30, 10/1/87 PUMPED/TESTED BY RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny and warm

REFERENCE POINT: Pressure Transducer/ Top of Christy REFERENCE ELEVATION: ?/ 57.38'

INITIAL DEPTH TO WATER: 23.23' INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 11.77'

VOLUME OF 1 CASING FULL OF WATER: 0.26' CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.26 x 7.479 = 1.92 GAL.

	CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_0 - h)$	COMMENTS & OBSERVATIONS
9-29	1107.52	0	0	23.23	= depth to H_2O	9-29 (M-SCOPE)
	1127.40	0	0	5.50	depth of = water above probe	TEST BEGINS AT 1200
						WATER LEVELS
						RECORDED USING
						DATA LOGGER
	0055.15	37	4566.38	5.25	-0.25	10-1 (Recovery)
	0256.21	39	4566.38	5.47	-0.03	
	1150.20	48	4566.38	23.32	-0.09	96% recovered (measured w/ m-scope)

NO. OF CASINGS FULL PUMPED:

Depth Sampled:

SAMPLES TAKEN:

PRESERVATIVE:

Note: 23.23 = 5.50 = SHOC recorded on Channel B

Wehler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-1041H WELL NO. : V-2 DATE: 9/29,30,10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: " Pumping Method: OBSERVATION WELL Weather: Sunny + warm

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: ____

INITIAL DEPTH TO WATER: 23.23 INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 11.77

VOLUME OF 1 CASING FULL OF WATER: 0.26 CU. FEET

(PI x R^2 x H), IN FT^3 0.26 x 7.479 = 1.92 GAL. STATIC LEVEL = 5.50'

CLOCK TIME	TIME ELAPSED	V-4 METER READING (ft^3)	DEPTH OF WATER ABOVE PROBE (FEET)	Q (cfs)	COMMENTS & OBSERVATIONS
1605.30	4 hours	12189.13	3.85	2.04	9/29
1750.45	5	12205.71	3.82	2.02	
1800.30	6	12224.69	3.80	2.07	
1900.30	7	12241.05	3.77	2.02	
2000.45	8	12257.50	3.75	2.04	
2100.45	9	12273.86	3.72	2.02	
2158.30	10	12289.61	3.70	2.02	
2259.30	11	12306.20	3.70	2.07	
2357.30	12	12322.94	3.72	2.09	9/30
NO DATA	13	NO DATA	NO DATA	NO DATA	
0203.30	14	12356.08	3.75	1.99	
NO DATA	15	NO DATA	NO DATA	NO DATA	
0402.30	16	12388.16	3.72	2.02	
NO DATA	17	NO DATA	NO DATA	NO DATA	
0601.30	18	12420.23	3.72	2.02	
0704.00	19	12437.05	3.70	2.02	
0758.00	20	12451.57	3.70	1.99	
0900.00	21	12468.23	3.67	2.02	
0958.00	22	12483.815	3.65	2.01	
1105.00	23	12501.60	3.65	1.98	

NO. OF CASINGS FULL PUMPED: ____ NOTE: recorded on channel 8

Depth Sampled: — Total Drawdown = 5.50' - 3.30 = 2.20'

SAMPLES TAKEN: —

PRESERVATIVE: ____

Wehler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-1041 WELL NO. : V-2 DATE: 9/29-30,10/1/87 PUMPED/TESTED BY: RGE

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny + warm

REFERENCE POINT: Pressure Transducer REFERENCE ELEVATION: —

INITIAL DEPTH TO WATER: 23.23' INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 11.77'

VOLUME OF 1 CASING FULL OF WATER: 0.26 CU. FEET

(PI x R^2 x H), IN FT^3 0.26 x 7.479 = 1.92 GAL.

CLOCK TIME	TIME ELAPSED	V-4 METER READING (cfs)	Depth of water above probe (ft)	Q (cfs)	COMMENTS & OBSERVATIONS
1200.00	24	12516.38	3.65	2.01	
1300.00	25	12532.51	3.67	2.01	
1359.00	26	12551.91	3.42*	2.41*	Q increased at 1315
1500.00	27	12569.79	3.40	2.23	
1604.00	28	12589.54	3.40	2.35	
1700.00	29	12607.54	3.37	2.35	
1800.00	30	12626.39	3.37	2.35	
1900.00	31	12645.20	3.37	2.34	
2000.00	32	12663.95	3.35	2.34	
2100.00	33	12682.06	3.35	2.33	
2200.00	34	12701.37	3.32	2.33	
2300.00	35	12720.07	3.32	2.33	
2400.00	36	12738.79	3.30	2.33	END OF PUMPING 10/1

NO. OF CASINGS FULL PUMPED: ______ NOTE: recorded on Channel 8

Depth Sampled: ______ TOTAL Drawdown = 5.50-3.30=2.20'

SAMPLES TAKEN:

PRESERVATIVE:

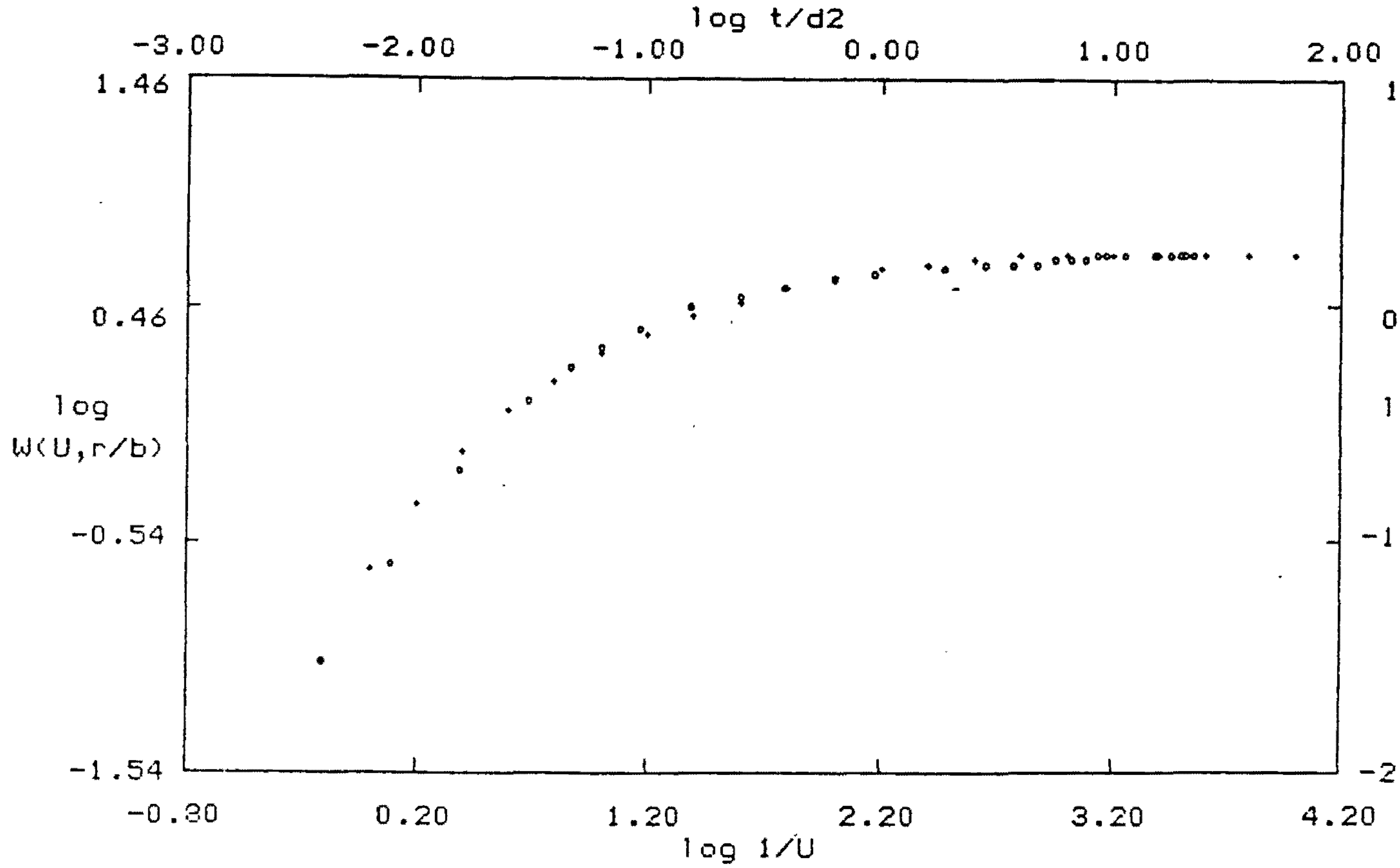
Hantush - Jacob Method (by GWAP)

Data for Pump Test

Well Name: V4a   Date of Test: 9/29/87
Well Number: 1
Pumped Well Discharge(Q) = 2.05 gpm
Pumped Well Radius(r) = 0.17 feet
Distance(d) of Observation Well from Pumped Well = 8.00 feet (V2)

Entry No.	Time(t) (min.)	Drawdown(s) (ft.)	t / d^2 (min./sq.ft.)
********	************	************	*************
1	0.000	0.000	0.00E+00
2	0.250	0.030	3.91E-03
3	0.500	0.080	7.81E-03
4	1.000	0.200	1.56E-02
5	2.000	0.400	3.13E-02
6	3.000	0.550	4.69E-02
7	4.000	0.650	6.25E-02
8	6.000	0.800	9.38E-02
9	10.000	0.980	1.56E-01
10	16.000	1.100	2.50E-01
11	25.000	1.200	3.91E-01
12	40.000	1.300	6.25E-01
13	60.000	1.350	9.38E-01
14	119.000	1.430	1.86E+00
15	179.000	1.480	2.80E+00
16	240.000	1.500	3.75E+00
17	300.000	1.530	4.69E+00
18	360.000	1.550	5.63E+00
19	420.000	1.580	6.56E+00
20	480.000	1.600	7.50E+00
21	540.000	1.630	8.44E+00
22	600.000	1.650	9.38E+00
23	720.000	1.630	1.13E+01
24	960.000	1.630	1.50E+01
25	1140.000	1.650	1.78E+01
26	1260.000	1.680	1.97E+01
27	1320.000	1.680	2.06E+01
28	1440.000	1.680	2.25E+01

PUMP TEST DATA (V4)



o - Data

\+ - Type Curve
Confined Leaky: r/B = 0.10

SOLUTION

Transmissivity = 6.289E-02 ft.2/min.
Storativity = 1.587E-03

Wahler Associates

CALCULATION SHEET

SHEET 1 OF 5 SHEETS

PROJECT: Jaco Chemical Corporation

PROJECT NO. JCO-104H

SUBJECT: Constant - Discharge Test Calculations

FILE

CALCULATED BY: D.S.   CHECKED BY: A.C.   DATE: 10/1/87

Hantush - Jacob Method (by computer program GWAP)

$T = 6.29 \times 10^{-2}\ ft^2/min$

$K = \frac{6.29 \times 10^{-2}}{7}$ $b = 7'$

$\boxed{K = 8.98 \times 10^{-3}\ ft/min = 4.56 \times 10^{-3}\ cm/sec}$

Seepage velocity, V

$V = K \frac{dh}{dl} \frac{1}{n}$

$V = 8.98 \times 10^{-3} \times 0.004 \times \frac{1}{0.4}$

$V = 8.98 \times 10^{-5}\ ft/min$

$\boxed{V = 47.2\ ft/yr}$

From A-aquifer potentiometric maps,

$\frac{dh}{dl} \simeq 0.004$

n for A-aquifer material is assumed to be 0.4 (Freeze and Cherry, 1979)

Wahler Associates

CALCULATION SHEET

SHEET 2 OF 5 SHEETS

PROJECT Jasco Chemical Corporation

PROJECT NO. JCO-104H

SUBJECT Constant – Discharge Test Calculations

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE

Jacob Straight Line Analysis:

$$T = \frac{2.3\,Q}{4\pi\,\Delta(h_o - h)}$$

$Q = 2.05$ gpm $= 0.274\ ft^3/min$

b (aquifer thickness) $= 7'$

$\Delta(h_o - h) = 0.83'$ from graph

$$T = \frac{2.3\,(0.274\ ft^3/min)}{4\pi\,(0.83\ ft)}$$

$$\boxed{T = 6.04 \times 10^{-2}\ ft^2/min}$$

$$K = T/b$$

$$K = \frac{6.04 \times 10^{-2}\ ft^2/min}{7\ ft}$$

$$\boxed{K = 8.63 \times 10^{-3}\ ft/min = 4.23 \times 10^{-3}\ cm/sec}$$

$$S = \frac{2.25\,T\,t_o}{r^2}$$

$r = 8\ ft$

$t_o = 0.68$ min (from graph)

$$S = \frac{2.25\,(6.04 \times 10^{-2}\ ft^2/min)(0.68\ min)}{64\ ft^2}$$

$$\boxed{S = 1.44 \times 10^{-3}}$$

PROJECT Jasco Chemical Corporation PROJECT NO. JCO-104H

SUBJECT Constant Discharge Test Calculations

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE 10/1/87

Seepage Velocity V;

$$V = K \cdot \frac{dh}{dl} \cdot \frac{1}{n}$$

Based on potentiometric maps,

$$\frac{dh}{dl} \simeq 0.004$$

Porosity of A-aquifer material is assumed to be 0.4 (Freeze & Cherry, 1979).

$$V = 8.63 \times 10^{-3} \times 0.004 \times \frac{1}{0.4}$$

$$V = 8.63 \times 10^{-5} \text{ ft/min}$$

$$\boxed{V = 45.4 \text{ ft/yr}}$$

Wahler Associates

CALCULATION SHEET

SHEET 4 OF 5 SHEETS

PROJECT NO. JCO-104-H

PROJECT

SUBJECT Constant Discharge Test Calculations

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE 10/1/87

Modified Theis non-equilibrium equation for Recovery Data:

$$T = \frac{Q}{4\pi(S_1 - S_2)} \ln\left(\frac{(t_1/t_1')}{(t_2/t_2')}\right)$$

Recovery data from V-4:

t/t'		t' time since pumping stopped (min)	S residual drawdown (ft)
2160.5/.5	= 4,321.0	0.5	4.02
2161/1.0	= 2161.0	1.00	3.12
2162/2.0	= 1081.0	2.00	2.32
2164/4.0	= 541.0	4.00	1.80
2168/8.0	= 271.0	8.00	1.32
2176/16.0	= 136.0	16.00	0.97
2185/25.0	= 87.4	25.00	0.80
2198/38.0	= 57.8	38.00	0.62
2220/60.0	= 37.0	60.00	0.47
2259/99.0	= 22.8	99.00	0.32
2299/139.0	= 16.5	139.00	0.22
2335/175.0	= 13.3	175.00	0.17

t_0 = 36 hrs = 2160 mins

$t = 2160 + t'$

Wahler Associates

CALCULATION SHEET

SHEET 5 OF 5 SHEETS

PROJECT

PROJECT NO. JCO-104H

SUBJECT Constant Discharge Test Calculations

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE 10/1/87

$$T = \frac{0.31\ ft^3/min}{4\pi(2.95)\,ft} \ln\left(\frac{2161}{13.3}\right)$$

$Q = 2.33$ gpm

$= 0.31\ ft^3/min$

$$\boxed{T = 4.26 \times 10^{-2}\ ft^2/min}$$

Select 2 data points from graph:

$(t_1/t_1') = 2161.0$

$(t_2/t_2') = 13.3$

$s_1 - s_2 = 3.12 - 0.17$

$= 2.95$

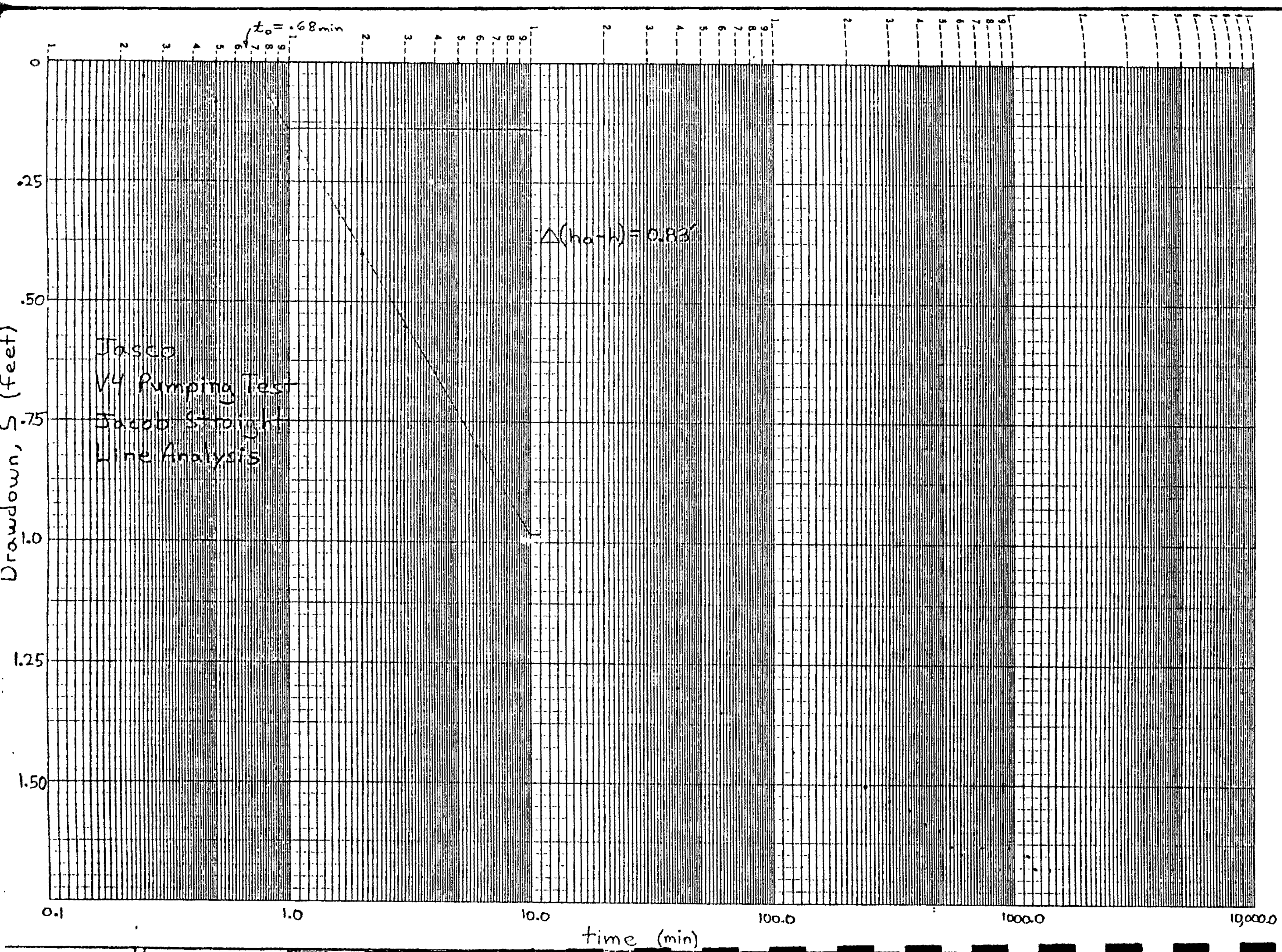
$b = 7'$

$$K = \frac{T}{b} = \frac{4.26 \times 10^{-2}}{7} \quad \boxed{\begin{aligned} &= 6.09 \times 10^{-3}\ ft/min \\ &= 3.10 \times 10^{-3}\ cm/sec \end{aligned}}$$

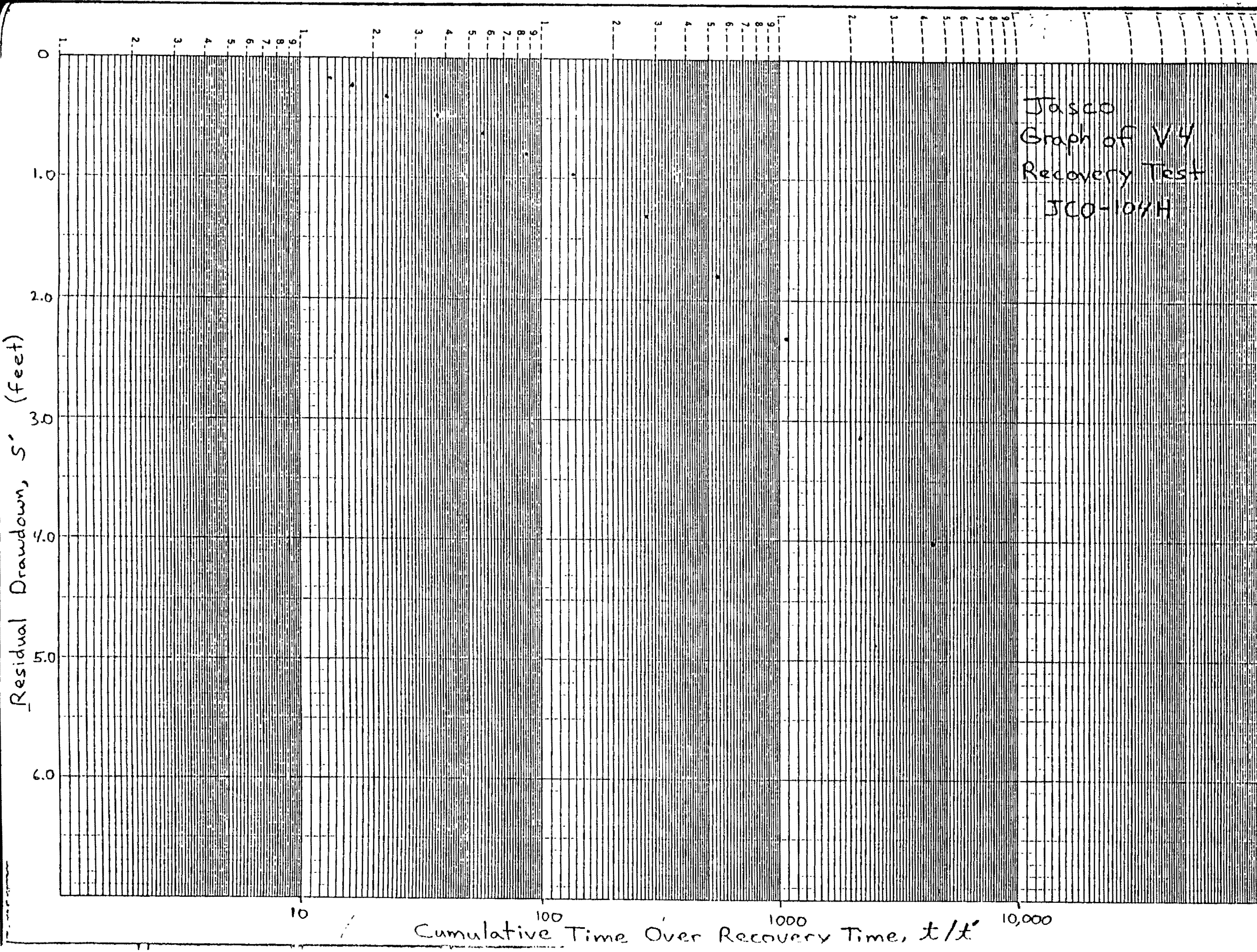
Seepage velocity, $V = K \frac{dh}{dl} \times \frac{1}{n}$; $\frac{dh}{dl} = 0.004$

$n = 0.4$

$$\boxed{V = 32\ ft/yr}$$



t_o = .68 min
Δ(ho-h) = 0.83'
Jasco
V4 Pumping Test
Jacob Straight Line Analysis
Drawdown, s (feet)
0
.25
.50
.75
1.0
1.25
1.50
0.1
1.0
10.0
100.0
1000.0
10,000.0
time (min)


Jasco
Graph of V4
Recovery Test
JCO-104H
Residual Drawdown, S' (Feet)
0
1.0
2.0
3.0
4.0
5.0
6.0
10
100
1000
10,000
Cumulative Time Over Recovery Time, t/t'

APPENDIX D

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-1041H WELL NO. : V-1 DATE: 9/29-30, 10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny and warm

REFERENCE POINT: TOP of Christy REFERENCE ELEVATION: 58.29'

INITIAL DEPTH TO WATER: 23.67 INITIAL DEPTH OF OPEN WELL: 48.00'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 24.33'

VOLUME OF 1 CASING FULL OF WATER: 0.53 CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.53 x 7.479 = 3.97 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh ($h_o - h$)	COMMENTS & OBSERVATIONS
1100.04	0	0	23.67	h_o	9-29 Test begins at 12:00p
1237.47	30min	76.32	23.67	0.00	—
1306.11	60min	134.35	23.67	0.00	—
1503.27	3hours	370.60	23.68	-0.01	—
1706.40	5	619.47	25.60	+0.07	—
2046.15	9	1063.03	23.64	+0.03	—
0641.30	18.5	2265.43	23.65	+0.02	9-30
1249.17	25	3008.35	23.67	0.00	Δ pumping rate at 13:15
2353.35	36	4551.39	23.75	-0.08	possible drawdown
0057.41	37	4566.38	23.66	+0.01	10/1 RECOVERY DATA
0301.00	39	4566.38	23.65	+0.02	
1203.45	48	4566.38	23.66	+0.01	

NO. OF CASINGS FULL PUMPED: ______

Depth Sampled: ______

SAMPLES TAKEN: ______

PRESERVATIVE:

Wahler Associates

WELL PUMPING/TESTING DATA SHEET Page 1 of 1

JOB NO. : JCO-1041H WELL NO. : V-3 DATE: 9/29,30,10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 5" Pumping Method: OBSERVATION WELL Weather: Sunny + warm

REFERENCE POINT: TOC REFERENCE ELEVATION: 57.60

INITIAL DEPTH TO WATER: 22.94' INITIAL DEPTH OF OPEN WELL: 35'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 12.06

VOLUME OF 1 CASING FULL OF WATER: 0.26 CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.26 x 7.479 = 1.97 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_0 - h)$	COMMENTS & OBSERVATIONS
1104.15	0	0	22.94	h_0	9-29 Begin Test at 12:00
1236.00	30min	72.70	22.97	-0.03	
1309.33	60min	140.05	23.02	-0.08	
1501.00	3hr	365.62	23.02	-0.08	
1704.10	5	614.42	23.02	-0.08	
2050.20	9	1071.27	23.06	-0.12	drawdown observed.
0644.30	18.5	2271.49	23.13	-0.19	9-30
0850.00	21	2525.00	23.15	-0.21	
1251.31	25	3012.83	23.16	-0.22	Δ pumping rate at 13:15
1445.30	27	3271.62	23.13	-0.19	
2345.30	36	4532.52	23.24	-0.30	
0050.15	37	4566.38	23.11	-0.17	10-1 recovery data
0305.08	39	4566.38	23.05	-0.11	
1201.50	48	4566.38	23.01	-0.07	

NO. OF CASINGS FULL PUMPED: ____

Depth Sampled: ____

SAMPLES TAKEN: ____

PRESERVATIVE: ____

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : V-5 DATE: 9/29-30, 10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny + Warm

REFERENCE POINT: Top of Steel casing REFERENCE ELEVATION: 60.14'

INITIAL DEPTH TO WATER: 25.95' INITIAL DEPTH OF OPEN WELL: 36.5'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 10.55'

VOLUME OF 1 CASING FULL OF WATER: 0.23 CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.23 x 7.479 = 1.72 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_o - h)$	COMMENTS & OBSERVATIONS
1125.30	0	0	25.95	h_o	9-29 Test begins at 12:00
1223.50	30min	48.14	25.95	0.00	
1301.57	60min	125.14	25.93	0.02	
1452.00	3hr	327.24	25.90	0.05	
1700.00	5	606.00	25.92	0.03	
2050.40	9	1071.95	25.96	-0.01	
0637.27	18.5	2257.25	25.97	-0.02	9-30
1244.00	25	2997.68	25.90	0.05	Δ Q at 1315
2356.15	36	4557.62	26.06	-0.11	10-1 - Recovery begins!
0102.20	37	4566.38	25.95	0.00	
0309.20	39	4566.38	25.95	0.00	
1159.50	48	4566.38	25.96	-0.01	

NO. OF CASINGS FULL PUMPED: ___________

Depth Sampled: ___________

SAMPLES TAKEN: ___________

PRESERVATIVE: ___________

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : U-6 DATE: 9/29-30, 10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: sunny + warm

REFERENCE POINT: Top of metal Casing REFERENCE ELEVATION: 58.59'

INITIAL DEPTH TO WATER: 24.59 INITIAL DEPTH OF OPEN WELL: 42.7'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 18.11

VOLUME OF 1 CASING FULL OF WATER: 0.40 CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.40 × 7.479 = 2.96 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh (h_o-h)	COMMENTS & OBSERVATIONS
1113.33	0	0	24.59	h_o	9.29 Test begins at 12:00
1226.40	30min	53.87	24.58	0.01	
1257.50	60min	116.82	24.54	0.05	
1453.30	3hrs	350.47	24.53	0.06	
1656.30	5	598.93	24.51	0.09	
2106.15	9	1103.43	24.56	0.03	
0638.00	18.5	2258.36	24.58	0.01	9.30
1237.51	25	2985.26	24.57	0.02	DQ at 1315
1805.00	30	3737.45	24.57	0.02	possible drawdown
2358.00	36	4561.71	24.68	-0.11	10.1 recovery begins at 000
0106.00	37	4566.38	24.59	0.00	
0312.40	39	4566.38	24.58	0.01	
1151.50	48	4566.38	24.59	0.00	

NO. OF CASINGS FULL PUMPED:

Depth Sampled:

SAMPLES TAKEN:

PRESERVATIVE:

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : V-7 DATE: 9/29,30, 10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny & Warm

REFERENCE POINT: Top of Steel Casing REFERENCE ELEVATION: 56.76'

INITIAL DEPTH TO WATER: 23.19' INITIAL DEPTH OF OPEN WELL: 35.5'
INITIAL HEIGHT OF WATER COLUMN IN WELL: 12.31'

VOLUME OF 1 CASING FULL OF WATER: 0.27 CU. FEET
(PI x R^2 x H), IN FT^3 0.27 x 7.479 = 2.01 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_o - h)$	COMMENTS & OBSERVATIONS
1043.04	0	0	23.19	h_o	9.29 Test begins at 12:00
1240.05	30min	80.97	23.17	0.02	
1314.36	60min	150.69	23.19	0.00	
1512.20	3hr	388.51	23.17	0.02	
1716.30	5	639.33	23.06	0.13	
0649.40	18.5	2281.93	23.22	-0.03	9.30
1227.30	25	2964.35	23.23	-0.04	Δ pumping rate at 13:15
2340.10	36	4520.07	23.32	-0.10	possible drawdown
0038.50	37	4566.38	23.23	-0.04	10.1 Recovery data
0242.00	39	4566.38	23.21	-0.02	
1213.40	48	4566.38	23.22	-0.03	

NO. OF CASINGS FULL PUMPED:

Depth Sampled:

SAMPLES TAKEN:

PRESERVATIVE:

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : I-1 DATE: 9/29,30,10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny + Warm

REFERENCE POINT: Top of Steel Casing REFERENCE ELEVATION: 59.22'

INITIAL DEPTH TO WATER: 25.13' INITIAL DEPTH OF OPEN WELL: 57.5'

INITIAL HEIGHT OF WATER COLUMN IN WELL: 32.37'

VOLUME OF 1 CASING FULL OF WATER: 0.71 CU. FEET

(PI x R^2 x H), IN FT^3 0.71 x 7.479 = 5.28 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_0 - h)$	COMMENTS & OBSERVATIONS
1111.45	0	0	25.15	h_0	9-29 test begins at 1200
1201.00	1min	2.02	25.13	0.02	
1202.00	2	4.04	25.13	0.02	
1203.00	3	6.06	25.14	0.01	
1204.00	4	8.08	25.13	0.02	
1205.00	5	10.10	25.13	0.02	
1210.00	10	22.00	25.14	0.01	
1215.00	15	33.00	25.13	0.02	
1220.05	20	40.57	25.15	0.00	
12.46.20	40	93.59	25.13	0.02	
155.25	60	111.95	25.12	0.03	
1450.25	3hr	344.24	25.13	0.02	
1648.09	5	582.06	25.10	0.05	
205150	9	1074.34	25.15	0.00	
0627.00	18.5	2236.14	25.14	0.01	9-30
1241.00	25	2991.62	25.09	0.06	
235440	36	4553.93	25.25	-0.10	possible drawdown recovery begins at 0000
0100.00	37	4566.38	25.15	0.00	10/1
0307.00	39	4566.38	25.13	0.02	
1149.05	48	456638	25.14	0.01	

NO. OF CASINGS FULL PUMPED: ________

Depth Sampled: ________

SAMPLES TAKEN: ________

PRESERVATIVE: ________

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

Page 1 of 1

JOB NO. : JCO-104H WELL NO. : I-2 DATE: 9/29,30, 10/1/87 PUMPED/TESTED BY: RGB/DS

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny + Warm

REFERENCE POINT: Top of Steel Casing REFERENCE ELEVATION: 57.66

INITIAL DEPTH TO WATER: 24.00 INITIAL DEPTH OF OPEN WELL: 54.50

INITIAL HEIGHT OF WATER COLUMN IN WELL: 30.50

VOLUME OF 1 CASING FULL OF WATER: 0.67 CU. FEET

($PI \times R^2 \times H$), IN FT^3 0.67 × 7.479 = 4.98 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_o - h)$	COMMENTS & OBSERVATIONS
1040.22	0	0	24.00	h_o	9-29 test begins at 1200
1241.25	30min	83.66	23.96	0.04	
1307.00	60	135.34	23.97	0.03	
1510.40	3hr	385.15	23.95	0.05	
1714.30	5	635.29	23.95	0.05	
0651.40	18.5	2285.97	23.99	0.01	9-30
1231.17	25	2971.99	23.99	0.01	
2338.00	36	4515.01	24.13	-0.13	possible drawdown
0043.00	37	4566.38	24.00	0.00	10-1 Recovery data
0246.00	39	4566.38	23.99	0.01	
1211.30	48	4566.38	23.99	0.01	

NO. OF CASINGS FULL PUMPED:

Depth Sampled:

SAMPLES TAKEN:

PRESERVATIVE:

Wahler Associates

WELL PUMPING/TESTING DATA SHEET

JOB NO. : JCO-104H WELL NO. : I-3 DATE: 9/29,30,10/1/87 PUMPED/TESTED BY: RGB/O

WELL DIA.: 2" Pumping Method: OBSERVATION WELL Weather: Sunny + Warm

REFERENCE POINT: Top of Steel Casing REFERENCE ELEVATION: 57.29

INITIAL DEPTH TO WATER: 23.70 INITIAL DEPTH OF OPEN WELL: 55.0

INITIAL HEIGHT OF WATER COLUMN IN WELL: 30.3

VOLUME OF 1 CASING FULL OF WATER: 0.66 CU. FEET

(PI x R^2 x H), IN FT^3 0.66 x 7.479 = 4.94 GAL.

CLOCK TIME	TIME ELAPSED	TOTAL VOLUME PUMPED (gallons)	DEPTH TO WATER (feet)	Δh $(h_0 - h)$	COMMENTS & OBSERVATIONS
1047.10	0	0	23.70	h_0	9-29 Test begins at 1200
1238.30	30min	77.77	23.69	0.01	
1316.30	60min	154.53	23.68	0.02	
1508.35	3	380.94	23.66	0.04	
1718.15	5	642.87	23.66	0.04	
0658.05	18.5	2298.93	23.71	-0.01	9-30
1223.31	25	2956.27	23.68	0.02	
2336.00	36	4510.34	23.84	-0.14	Possible drawdown
0047.00	37	4566.38	23.71	-0.01	10-1 recovery data
0252.00	39	4566.38	23.69	0.01	
1216.50	48	4566.38	23.71	-0.01	

NO. OF CASINGS FULL PUMPED: ______

Depth Sampled: ______

SAMPLES TAKEN: ______

PRESERVATIVE: ______

APPENDIX E

SLUG Test: Well V-1
9-28-87

Time	ch	H(ft)
10:22:42	7	7.10
10:22:37	7	7.10
10:22:32	7	7.12
10:22:27	7	7.12
10:22:22	7	7.15
10:22:17	7	7.15
10:22:12	7	7.17
10:22:07	7	7.20
10:22:02	7	7.22
10:21:57	7	7.27
10:21:52	7	7.30
10:21:50	7	7.32
10:21:48	7	7.35
10:21:46	7	7.35
10:21:44	7	7.37
10:21:42	7	7.40
10:21:40	7	7.42
10:21:38	7	7.45
10:21:36	7	7.47
10:21:34	7	7.50
10:21:32	7	7.52
10:21:30	7	7.57
10:21:28	7	7.60
10:21:26	7	7.62
10:21:24	7	7.67
10:21:22	7	7.72
10:21:20	7	7.75
10:21:18	7	7.80
10:21:16	7	7.85
10:21:14	7	7.90
10:21:12	7	7.95
10:21:11	7	7.97
10:21:10	7	8.02
10:21:09	7	8.05
10:21:08	7	8.07
10:21:07	7	8.10
10:21:06	7	8.15
10:21:05	7	8.17
10:21:04	7	8.20
10:21:03	7	8.25
10:21:02	7	8.27
10:21:01	7	8.32
10:21:00	7	8.37
10:20:59	7	8.42
10:20:58	7	8.47
10:20:57	7	8.52
10:20:56	7	8.57
10:20:55	7	8.65
10:20:54	7	8.72
10:20:53	7	9.22
10:20:52	7	9.32

10:06 HRS 87/09/15 #10

Begin slug test

Time	ch	H(ft)
10:27:08	7	6.05
10:27:07	7	6.00
10:27:06	7	5.97
10:27:05	7	5.95
10:27:04	7	5.90
10:27:03	7	5.87
10:27:02	7	5.85
10:27:01	7	5.82
10:27:00	7	5.77
10:26:59	7	5.75
10:26:58	7	5.70
10:26:57	7	5.65
10:26:56	7	5.60
10:26:55	7	5.55
10:26:54	7	5.50
10:26:53	7	5.42
10:26:52	7	5.32
10:26:51	7	5.25
10:26:50	7	5.12
10:26:49	7	5.00

10:25 HRS 87/09/15 #10

Begin reverse slug test

STATION ID = 01

Time	ch	H(ft)
10:25:52	7	7.02
10:25:42	7	7.02
10:25:32	7	7.02
10:25:22	7	7.02
10:25:12	7	7.02
10:25:02	7	7.02
10:24:52	7	7.02
10:24:42	7	7.02
10:24:32	7	7.02
10:24:22	7	7.02
10:24:17	7	7.05
10:24:12	7	7.05
10:24:07	7	7.05
10:24:02	7	7.05
10:23:57	7	7.05
10:23:52	7	7.05
10:23:47	7	7.05
10:23:42	7	7.05
[illegible]	7	7.05
10:23:32	7	7.05
10:23:27	7	7.05
10:23:22	7	7.05
10:23:17	7	7.05
10:23:12	7	7.05
10:23:07	7	7.07
10:23:02	7	7.07
10:22:57	7	7.07
10:22:52	7	7.07
10:22:47	7	7.10

Time	ch	H(ft)
STATION ID = 01		
10:30:04	7	7.00
10:29:59	7	7.00
10:29:54	7	7.00
10:29:49	7	7.00
10:29:44	7	7.00
10:29:39	7	7.00
10:29:34	7	6.97
10:29:29	7	6.97
10:29:24	7	7.00
10:29:19	7	6.97
10:29:14	7	6.97
10:29:09	7	6.97
10:29:04	7	6.97
10:28:59	7	6.97
10:28:54	7	6.97
10:28:49	7	6.95
10:28:44	7	6.95
10:28:39	7	6.95
10:28:34	7	6.92
10:28:29	7	6.92
10:28:24	7	6.90
10:28:19	7	6.90
10:28:14	7	6.87
10:28:09	7	6.85
10:28:04	7	6.82
10:27:59	7	6.80
10:27:54	7	6.77
10:27:49	7	6.72
10:27:47	7	6.72
10:27:45	7	6.70
10:27:43	7	6.67
10:27:41	7	6.65
10:27:39	7	6.62
10:27:37	7	6.60
10:27:35	7	6.57
10:27:33	7	6.55
10:27:31	7	6.52
10:27:29	7	6.50
10:27:27	7	6.47
10:27:25	7	6.42
10:27:23	7	6.40
10:27:21	7	6.35
10:27:19	7	6.32
10:27:17	7	6.27
10:27:15	7	6.22
10:27:13	7	6.17
10:27:11	7	6.12
10:27:09	7	6.07

10:57:48	7	6.97
10:57:43	7	6.97
10:57:38	7	6.97
10:57:33	7	6.97
10:57:28	7	6.97
10:57:23	7	6.97
10:57:18	7	7.00
10:57:13	7	7.00
10:57:08	7	7.00
10:57:06	7	7.00
10:57:04	7	7.00
10:57:02	7	7.00
10:57:00	7	7.02
10:56:58	7	7.02
10:56:56	7	7.02
10:56:54	7	7.02
10:56:52	7	7.02
10:56:50	7	7.02
10:56:48	7	7.02
10:56:46	7	7.02
10:56:44	7	7.05
10:56:42	7	7.05
10:56:40	7	7.05
10:56:38	7	7.05
10:56:36	7	7.05
10:56:34	7	7.07
10:56:32	7	7.07
10:56:30	7	7.07
10:56:28	7	7.10
10:56:27	7	7.10
10:56:26	7	7.10
10:56:25	7	7.10
10:56:24	7	7.10
10:56:23	7	7.12
10:56:22	7	7.12
10:56:21	7	7.12
10:56:20	7	7.12
10:56:19	7	7.15
10:56:18	7	7.15
10:56:17	7	7.15
10:56:16	7	7.17
10:56:15	7	7.17
10:56:14	7	7.17
10:56:13	7	7.20
10:56:12	7	7.20
10:56:11	7	7.25
10:56:10	7	7.12
10:56:09	7	7.15
10:56:08	7	9.35

10:46 HRS 87/09/15 #10

Begin slug

11:01:05	7	6.77
11:01:03	7	6.77
11:01:02	7	6.75
11:01:01	7	6.75
11:01:00	7	6.75
11:00:59	7	6.75
11:00:58	7	6.72
11:00:57	7	6.72
11:00:56	7	6.70
11:00:55	7	6.70
11:00:54	7	6.67
11:00:53	7	6.65
11:00:52	7	6.62
11:00:51	7	6.60
11:00:50	7	6.57
11:00:49	7	6.52
11:00:48	7	6.45
11:00:47	7	6.32
11:00:46	7	6.17
11:00:45	7	6.02
11:00:44	7	5.87
11:00:43	7	5.82

11:00 HRS 87/09/15 #10

Begin reverse

STATION ID = 02

11:00:18	7	6.95
11:00:08	7	6.95
10:59:58	7	6.95
10:59:48	7	6.95
10:59:38	7	6.95
10:59:33	7	6.95
10:59:28	7	6.95
10:59:23	7	6.95
10:59:18	7	6.95
10:59:13	7	6.95
10:59:08	7	6.95
10:59:03	7	6.95
10:58:58	7	6.95
10:58:53	7	6.95
10:58:48	7	6.95
10:58:43	7	6.95
10:58:38	7	6.95
10:58:33	7	6.95
10:58:28	7	6.95
10:58:23	7	6.95
10:58:18	7	6.97
10:58:13	7	6.97
10:58:08	7	6.97
10:58:03	7	6.97
10:57:58	7	6.97
10:57:53	7	6.97

STATION ID = 02

11:03:03	7	6.90
11:02:58	7	6.90
11:02:53	7	6.90
11:02:48	7	6.90
11:02:43	7	6.90
11:02:38	7	6.90
11:02:33	7	6.90
11:02:28	7	6.90
11:02:23	7	6.90
11:02:18	7	6.90
11:02:13	7	[illegible]
11:02:08	7	6.87
11:02:03	7	6.87
11:01:58	7	6.87
11:01:53	7	6.87
11:01:48	7	6.87
11:01:43	7	6.87
11:01:41	7	6.87
11:01:39	7	6.87
11:01:37	7	6.85
11:01:35	7	6.85
11:01:33	7	6.85
11:01:31	7	6.85
11:01:29	7	6.85
11:01:27	7	6.85
11:01:25	7	6.85
11:01:23	7	6.85
11:01:21	7	6.82
11:01:19	7	6.82
11:01:17	7	6.82
11:01:15	7	6.82
11:01:13	7	6.82
11:01:11	7	6.80
11:01:09	7	6.80
11:01:07	7	6.80

09:54:04	7	6.20
09:53:59	7	6.20
09:53:54	7	6.20
09:53:49	7	6.20
09:53:44	7	6.20
09:53:39	7	6.20
09:53:34	7	6.22
09:53:29	7	6.22
09:53:24	7	6.22
09:53:19	7	6.22
09:53:14	7	6.22
09:53:09	7	6.25
09:53:07	7	6.25
09:53:05	7	6.25
09:53:03	7	6.25
09:53:01	7	6.25
09:52:59	7	6.25
09:52:57	7	6.25
09:52:55	7	6.25
09:52:53	7	6.25
09:52:51	7	6.25
09:52:49	7	6.25
09:52:47	7	6.27
09:52:45	7	6.27
09:52:43	7	6.27
09:52:41	7	6.27
09:52:39	7	6.27
09:52:37	7	6.27
09:52:35	7	6.27
09:52:33	7	6.27
09:52:31	7	6.27
09:52:29	7	6.27
09:52:28	7	6.30
09:52:27	7	6.30
09:52:26	7	6.30
09:52:25	7	6.30
09:52:24	7	6.30
09:52:23	7	6.30
09:52:22	7	6.30
09:52:21	7	6.30
09:52:20	7	6.30
09:52:19	7	6.30
09:52:18	7	6.30
09:52:17	7	6.30
09:52:16	7	[illegible]
09:52:15	7	[illegible]
09:52:14	7	[illegible]
09:52:13	7	6.27
09:52:12	7	6.27
09:52:11	7	5.92
09:52:10	7	[illegible]
09:52:09	7	[illegible]

Begin slug test

10:02:09	7	6.00
10:01:39	7	6.00
10:01:09	7	6.00
10:00:39	7	6.02
10:00:29	7	6.02
10:00:19	7	6.02
10:00:09	7	6.02
09:59:59	7	6.02
09:59:49	7	6.02
09:59:39	7	6.02
09:59:29	7	6.05
09:59:19	7	6.05
09:59:09	7	6.05
09:58:59	7	6.05
09:58:49	7	6.05
09:58:39	7	6.05
09:58:29	7	6.05
09:58:19	7	6.05
09:58:09	7	6.07
09:57:59	7	6.07
09:57:49	7	6.07
09:57:39	7	6.07
09:57:29	7	6.07
09:57:19	7	6.07
09:57:09	7	6.10
09:56:59	7	6.10
09:56:49	7	6.10
09:56:39	7	6.10
09:56:29	7	6.10
09:56:19	7	6.12
09:56:09	7	6.12
09:55:59	7	6.12
09:55:49	7	6.12
09:55:39	7	6.12
09:55:34	7	6.12
09:55:29	7	6.15
09:55:24	7	6.15
09:55:19	7	6.15
09:55:14	7	6.15
09:55:09	7	6.15
09:55:04	7	6.15
09:54:59	7	6.15
09:54:54	7	6.15
09:54:49	7	6.15
09:54:44	7	6.17
09:54:39	7	6.17
09:54:34	7	6.17
09:54:29	7	6.17
09:54:24	7	6.17
09:54:19	7	6.17
09:54:14	7	6.17
09:54:09	7	6.17

STATION ID = 03

10:06:39	7	5.95
10:06:09	7	5.95
10:05:39	7	5.95
10:05:09	7	5.95
10:04:39	7	5.95
10:04:09	7	5.97
10:03:39	7	5.97
10:03:09	7	5.97
10:02:39	7	5.97

11:11:41	7	9.17
11:11:36	7	9.20
11:11:31	7	9.20
11:11:26	7	9.20
11:11:21	7	9.22
11:11:16	7	9.22
11:11:11	7	9.25
11:11:06	7	9.25
11:11:01	7	9.27
11:10:59	7	9.27
11:10:57	7	9.27
11:10:55	7	9.30
11:10:53	7	9.30
11:10:51	7	9.30
11:10:49	7	9.32
11:10:47	7	9.32
11:10:45	7	9.35
11:10:43	7	9.35
11:10:41	7	9.37
11:10:39	7	9.37
11:10:37	7	9.40
11:10:35	7	9.42
11:10:33	7	9.42
11:10:31	7	9.45
11:10:29	7	9.47
11:10:27	7	9.50
11:10:25	7	9.52
11:10:23	7	9.55
11:10:21	7	9.60
11:10:20	7	9.60
11:10:19	7	9.62
11:10:18	7	9.65
11:10:17	7	9.67
11:10:16	7	9.70
11:10:15	7	9.70
11:10:14	7	9.72
11:10:13	7	9.77
11:10:12	7	9.80
11:10:11	7	9.82
11:10:10	7	9.85
11:10:09	7	9.90
11:10:08	7	9.92
11:10:07	7	9.97
11:10:06	7	10.00
11:10:05	7	10.05
11:10:04	7	10.12
11:10:03	7	10.27
11:10:02	7	11.22
11:10:01	7	12.45

11:03 HRS 87/09/15 #10

Begin slug

11:15:17	7	8.45
11:15:16	7	8.42
11:15:15	7	8.40
11:15:14	7	8.37
11:15:13	7	8.32
11:15:12	7	8.30
11:15:11	7	8.27
11:15:10	7	8.25
11:15:09	7	8.20
11:15:08	7	8.15
11:15:07	7	8.12
11:15:06	7	8.07
11:15:05	7	8.02
11:15:04	7	7.97
11:15:03	7	7.90
11:15:02	7	7.82
11:15:01	7	8.00
11:15:00	7	8.92

11:14 HRS 87/09/15 #10

Begin reverse slug

STATION ID = 04

11:14:41	7	9.10
11:14:31	7	9.10
11:14:21	7	9.10
11:14:11	7	9.10
11:14:01	7	9.10
11:13:51	7	9.10
11:13:41	7	9.10
11:13:31	7	9.12
11:13:26	7	9.12
11:13:21	7	9.12
11:13:16	7	9.12
11:13:11	7	9.12
11:13:06	7	9.12
11:13:01	7	9.12
11:12:56	7	9.12
11:12:51	7	9.12
11:12:46	7	9.12
11:12:41	7	9.12
11:12:36	7	9.12
11:12:31	7	9.15
11:12:26	7	9.15
11:12:21	7	9.15
11:12:16	7	9.15
11:12:11	7	9.15
11:12:06	7	9.15
11:12:01	7	9.15
11:11:56	7	9.17
11:11:51	7	9.17
11:11:46	7	9.17

11:18:20	7	9.00
11:18:15	7	9.00
11:18:10	7	9.00
11:18:05	7	9.00
11:18:00	7	9.00
11:17:55	7	9.00
11:17:50	7	9.00
11:17:45	7	9.00
11:17:40	7	9.00
11:17:35	7	9.00
11:17:30	7	9.00
11:17:25	7	8.97
11:17:20	7	8.97
11:17:15	7	8.97
11:17:10	7	8.97
11:17:05	7	8.97
11:17:00	7	8.97
11:16:55	7	8.97
11:16:50	7	8.95
11:16:45	7	8.95
11:16:40	7	8.95
11:16:35	7	8.95
11:16:30	7	8.92
11:16:25	7	8.92
11:16:20	7	8.90
11:16:15	7	8.90
11:16:10	7	8.90
11:16:05	7	8.87
11:16:00	7	8.85
11:15:58	7	8.85
11:15:56	7	8.85
11:15:54	7	8.82
11:15:52	7	8.82
11:15:50	7	8.80
11:15:48	7	8.80
11:15:46	7	8.80
11:15:44	7	8.77
11:15:42	7	8.77
11:15:40	7	8.75
11:15:38	7	8.72
11:15:36	7	8.72
11:15:34	7	8.70
11:15:32	7	8.67
11:15:30	7	8.65
11:15:28	7	8.62
11:15:26	7	8.60
11:15:24	7	8.57
11:15:22	7	8.52
11:15:20	7	8.50
11:15:19	7	8.47
11:15:18	7	8.45

STATION ID = 04

11:20:00	7	9.0[illegible]
11:19:50	7	9.0[illegible]
11:19:40	7	9.0[illegible]
11:19:30	7	9.0[illegible]
11:19:20	7	9.0[illegible]
11:19:10	7	9.0[illegible]
11:19:00	7	9.0[illegible]
11:18:50	7	9.0[illegible]
11:18:40	7	9.0[illegible]
11:18:30	7	9.0[illegible]
11:18:25	7	9.0[illegible]

11:44:32	7	8.55
11:44:27	7	8.57
11:44:22	7	8.57
11:44:17	7	8.60
11:44:12	7	8.62
11:44:07	7	8.65
11:44:02	7	8.67
11:43:57	7	8.70
11:43:52	7	8.72
11:43:47	7	8.75
11:43:42	7	8.77
11:43:37	7	8.80
11:43:32	7	8.85
11:43:30	7	8.85
11:43:28	7	8.85
11:43:26	7	8.87
11:43:24	7	8.87
11:43:22	7	8.90
11:43:20	7	8.90
11:43:18	7	8.92
11:43:16	7	8.92
11:43:14	7	8.95
11:43:12	7	8.97
11:43:10	7	8.97
11:43:08	7	9.00
11:43:06	7	9.02
11:43:04	7	9.02
11:43:02	7	9.05
11:43:00	7	9.05
11:42:58	7	9.07
11:42:56	7	9.10
11:42:54	7	9.12
11:42:52	7	9.12
11:42:51	7	9.15
11:42:50	7	9.15
11:42:49	7	9.17
11:42:48	7	9.17
11:42:47	7	9.20
11:42:46	7	9.20
11:42:45	7	9.22
11:42:44	7	9.22
11:42:43	7	9.25
11:42:42	7	9.25
11:42:41	7	9.27
11:42:40	7	9.27
11:42:39	7	9.30
11:42:38	7	9.32
11:42:37	7	9.35
11:42:36	7	9.37
11:42:35	7	9.35
11:42:34	7	9.22
11:42:33	7	10.47
11:42:32	7	9.65

11:33 HRS 87/09/15 #10

Begin slug

11:54:02	7	7.65
11:53:32	7	7.67
11:53:02	7	7.67
11:52:32	7	7.70
11:52:02	7	7.72
11:51:32	7	7.75
11:51:02	7	7.80
11:50:52	7	7.80
11:50:42	7	7.80
11:50:32	7	7.82
11:50:22	7	7.82
11:50:12	7	7.85
11:50:02	7	7.85
11:49:52	7	7.85
11:49:42	7	7.87
11:49:32	7	7.87
11:49:22	7	7.90
11:49:12	7	7.92
11:49:02	7	7.92
11:48:52	7	7.95
11:48:42	7	7.95
11:48:32	7	7.97
11:48:22	7	7.97
11:48:12	7	8.00
11:48:02	7	8.02
11:47:52	7	8.02
11:47:42	7	8.05
11:47:32	7	8.07
11:47:22	7	8.10
11:47:12	7	8.10
11:47:02	7	8.12
11:46:52	7	8.15
11:46:42	7	8.17
11:46:32	7	8.20
11:46:22	7	8.22
11:46:12	7	8.25
11:46:02	7	8.27
11:45:57	7	8.27
11:45:52	7	8.27
11:45:47	7	8.30
11:45:42	7	8.32
11:45:37	7	8.32
11:45:32	7	8.35
11:45:27	7	8.35
11:45:22	7	8.37
11:45:17	7	8.40
11:45:12	7	8.40
11:45:07	7	8.42
11:45:02	7	8.42
11:44:57	7	8.45
11:44:52	7	8.47
11:44:47	7	8.50
11:44:42	7	8.50
11:44:37	7	8.52

STATION ID = 05

12:02:32	7	7.45
12:02:02	7	7.45
12:01:32	7	7.45
12:01:02	7	7.47
12:00:32	7	7.47
12:00:02	7	7.47
11:59:32	7	7.50
11:59:02	7	7.50
11:58:32	7	7.52
11:58:02	7	7.52
11:57:32	7	7.52
11:57:02	7	7.55
11:56:32	7	7.55
11:56:02	7	7.57
11:55:32	7	7.60
11:55:02	7	7.60
11:54:32	7	7.62

STATION ID = 06

11:30:34	7	8.60
11:30:32	7	8.60
11:30:30	7	8.60
11:30:28	7	8.60
11:30:26	7	8.60
11:30:24	7	8.60
11:30:22	7	8.60
11:30:20	7	8.60
11:30:19	7	8.60
11:30:18	7	8.60
11:30:17	7	8.60
11:30:16	7	8.57
11:30:15	7	8.57
11:30:14	7	8.60
11:30:13	7	8.57
11:30:12	7	8.57
11:30:11	7	8.57
11:30:10	7	8.57
11:30:09	7	8.55
11:30:08	7	8.55
11:30:07	7	8.55
11:30:06	7	8.52
11:30:05	7	8.50
11:30:04	7	8.47
11:30:03	7	8.42
11:30:02	7	8.35
11:30:01	7	8.25
11:30:00	7	7.57

11:29 HPS 87/09/15 #10

Begin reverse slug

STATION ID = 06

11:29:04	7	8.62
11:28:59	7	8.62
11:28:57	7	8.62
11:28:55	7	8.62
11:28:53	7	8.62
11:28:51	7	8.62
11:28:49	7	8.62
11:28:47	7	8.62
11:28:45	7	8.62
11:28:43	7	8.62
11:28:41	7	8.62
11:28:39	7	8.62
11:28:37	7	8.62
11:28:35	7	8.62
11:28:33	7	8.62
11:28:31	7	8.62
11:28:29	7	8.62
11:28:27	7	8.62
11:28:25	7	8.62
11:28:23	7	8.62
11:28:21	7	8.62
11:28:19	7	8.65
11:28:18	7	8.62
11:28:17	7	8.62
11:28:16	7	8.62
11:28:15	7	8.65
11:28:14	7	8.65
11:28:13	7	8.65
11:28:12	7	8.65
11:28:11	7	8.65
11:28:10	7	8.65
11:28:09	7	8.65
11:28:08	7	8.67
11:28:07	7	8.67
11:28:06	7	8.70
11:28:05	7	8.70
11:28:04	7	8.75
11:28:03	7	8.77
11:28:02	7	8.87
11:28:01	7	9.07
11:28:00	7	9.27
11:27:59	7	10.62

11:20 HPS 87/09/15 #10

Begin slug test

STATION ID = 07

12:27:03	7	8.52
12:26:58	7	8.52
12:26:53	7	8.55
12:26:48	7	8.55
12:26:43	7	8.55
12:26:38	7	8.55
12:26:33	7	8.55
12:26:28	7	8.55
12:26:23	7	8.55
12:26:18	7	8.55
12:26:16	7	8.55
12:26:14	7	8.55
12:26:12	7	8.55
12:26:10	7	8.55
12:26:08	7	8.55
12:26:06	7	8.55
12:26:04	7	8.55
12:26:02	7	8.57
12:26:00	7	8.57
12:25:58	7	8.57
12:25:56	7	8.57
12:25:54	7	8.57
12:25:52	7	8.57
12:25:50	7	8.57
12:25:48	7	8.57
12:25:46	7	8.60
12:25:44	7	8.60
12:25:42	7	8.60
12:25:40	7	8.62
12:25:38	7	8.62
12:25:37	7	8.65
12:25:36	7	8.65
12:25:35	7	8.65
12:25:34	7	8.67
12:25:33	7	8.67
12:25:32	7	8.70
12:25:31	7	8.70
12:25:30	7	8.72
12:25:29	7	8.75
12:25:28	7	8.77
12:25:27	7	8.82
12:25:26	7	8.85
12:25:25	7	8.90
12:25:24	7	8.97
12:25:23	7	9.05
12:25:22	7	9.17
12:25:21	7	9.30
12:25:20	7	9.45
12:25:19	7	9.67
12:25:18	7	10.25

12:10 HRS 87/09/15 #10

Begin slug test

STATION ID = 07

12:30:15	7	8.50
12:30:10	7	8.52
12:30:05	7	8.50
12:30:00	7	8.50
12:29:55	7	8.50
12:29:50	7	8.50
12:29:45	7	8.50
12:29:40	7	8.50
12:29:35	7	8.50
12:29:30	7	8.50
12:29:25	7	8.50
12:29:20	7	8.50
12:29:15	7	8.50
12:29:10	7	8.50
12:29:05	7	8.50
12:29:00	7	8.50
12:28:58	7	8.50
12:28:56	7	8.50
12:28:54	7	8.50
12:28:52	7	8.47
12:28:50	7	8.47
12:28:48	7	8.47
12:28:46	7	8.47
12:28:44	7	8.47
12:28:42	7	8.47
12:28:40	7	8.47
12:28:38	7	8.47
12:28:36	7	8.47
12:28:34	7	8.47
12:28:32	7	8.45
12:28:30	7	8.45
12:28:28	7	8.45
12:28:26	7	8.45
12:28:24	7	8.42
12:28:22	7	8.42
12:28:20	7	8.42
12:28:19	7	8.40
12:28:18	7	8.40
12:28:17	7	8.40
12:28:16	7	8.37
12:28:15	7	8.37
12:28:14	7	8.35
12:28:13	7	8.35
12:28:12	7	8.32
12:28:11	7	8.30
12:28:10	7	8.27
12:28:09	7	8.22
12:28:08	7	8.17
12:28:07	7	8.12
12:28:06	7	8.05
12:28:05	7	7.97
12:28:04	7	7.85
12:28:03	7	7.72
12:28:02	7	7.55
12:28:01	7	7.40
12:28:00	7	6.57

12:27 HRS 87/09 15 #10

Begin reverse slug

10:42:58	7	6.55
10:42:53	7	6.55
10:42:48	7	6.55
10:42:43	7	6.55
10:42:38	7	6.55
10:42:33	7	6.55
10:42:28	7	6.55
10:42:23	7	6.55
10:42:18	7	6.55
10:42:13	7	6.55
10:42:08	7	6.55
10:42:03	7	6.55
10:41:58	7	6.55
10:41:53	7	6.55
10:41:48	7	6.55
10:41:43	7	6.55
10:41:38	7	6.55
10:41:36	7	6.55
10:41:34	7	6.55
10:41:32	7	6.55
10:41:30	7	6.55
10:41:28	7	6.55
10:41:26	7	6.55
10:41:24	7	6.55
10:41:22	7	6.55
10:41:20	7	6.55
10:41:18	7	6.55
10:41:16	7	6.55
10:41:14	7	6.55
10:41:12	7	6.55
10:41:10	7	6.55
10:41:08	7	6.55
10:41:06	7	6.55
10:41:04	7	6.55
10:41:02	7	6.55
10:41:00	7	6.55
10:40:58	7	6.55
10:40:57	7	6.55
10:40:56	7	6.55
10:40:55	7	6.55
10:40:54	7	6.55
10:40:53	7	6.55
10:40:52	7	6.55
10:40:51	7	6.57
10:40:50	7	6.57
10:40:49	7	6.55
10:40:48	7	6.52
10:40:47	7	6.50
10:40:46	7	6.55
10:40:45	7	6.62
10:40:44	7	6.67
10:40:43	7	6.67
10:40:42	7	6.52
10:40:41	7	6.27
10:40:40	7	6.11
10:40:39	7	6.23
10:40:38	7	8.15

10:30 HRS 87/09/15 #10

Begin slug test

10:45:45	7	6.52
10:45:40	7	6.52
10:45:35	7	6.52
10:45:30	7	6.52
10:45:25	7	6.52
10:45:20	7	6.52
10:45:18	7	6.52
10:45:16	7	6.52
10:45:14	7	6.52
10:45:12	7	6.52
10:45:10	7	6.52
10:45:08	7	6.52
10:45:06	7	6.52
10:45:04	7	6.52
10:45:02	7	6.52
10:45:00	7	6.52
10:44:58	7	6.52
10:44:56	7	6.52
10:44:54	7	6.52
10:44:52	7	6.52
10:44:50	7	6.52
10:44:48	7	6.52
10:44:46	7	6.52
10:44:44	7	6.52
10:44:42	7	6.52
10:44:40	7	6.55
10:44:39	7	6.55
10:44:38	7	6.55
10:44:37	7	6.52
10:44:36	7	6.55
10:44:35	7	6.55
10:44:34	7	6.57
10:44:33	7	6.55
10:44:32	7	6.50
10:44:31	7	6.50
10:44:30	7	6.52
10:44:29	7	6.60
10:44:28	7	6.55
10:44:27	7	6.57
10:44:26	7	6.42
10:44:25	7	6.32
10:44:24	7	6.45
10:44:23	7	6.92
10:44:22	7	7.05
10:44:21	7	6.75
10:44:20	7	5.70

10:43 HRS 87/09/15 #10

Begin reverse slug

STATION ID = 08

10:43:48	7	6.55
10:43:43	7	6.55
10:43:38	7	6.55
10:43:33	7	6.55
10:43:28	7	6.55
10:43:23	7	6.55
10:43:18	7	6.55
10:43:13	7	6.55
10:43:08	7	6.55
10:43:03	7	6.55

STATION ID = 08

10:46:35	7	6.52
10:46:30	7	6.52
10:46:25	7	6.52
10:46:20	7	6.52
10:46:15	7	6.52
10:46:10	7	6.52
10:46:05	7	6.52
10:46:00	7	6.52
10:45:55	7	6.52
10:45:50	7	6.52

```
STATION ID = 09
12:18:40  7   9.32
12:18:38  7   9.32
12:18:36  7   9.32
12:18:34  7   9.32
12:18:32  7   9.32
12:18:30  7   9.32
12:18:28  7   9.32
12:18:26  7   9.32
12:18:24  7   9.32
12:18:22  7   9.32
12:18:21  7   9.32
12:18:20  7   9.32
12:18:19  7   9.32
12:18:18  7   9.32
12:18:17  7   9.32
12:18:16  7   9.32
12:18:15  7   9.32
12:18:14  7   9.32
12:18:13  7   9.32
12:18:12  7   9.30
12:18:11  7   9.30
12:18:10  7   9.32
12:18:09  7   9.35
12:18:08  7   9.37
12:18:07  7   9.37
12:18:06  7   9.30
12:18:05  7   9.20
12:18:04  7   9.17
12:18:03  7   9.15
12:18:02  7  11.00
12:02 HPS 87/09/15 #10
```

Begin slug test

```
STATION ID = 09
12:20:09  7   9.32
12:20:07  7   9.30
12:20:05  7   9.32
12:20:03  7   9.30
12:20:02  7   9.30
12:20:01  7   9.30
12:20:00  7   9.32
12:19:59  7   9.30
12:19:58  7   9.32
12:19:57  7   9.32
12:19:56  7   9.30
12:19:55  7   9.30
12:19:54  7   9.32
12:19:53  7   9.32
12:19:52  7   9.35
12:19:51  7   9.35
12:19:50  7   9.30
12:19:49  7   9.20
12:19:48  7   9.17
12:19:47  7   9.32
12:19:46  7   9.57
12:19:45  7   9.65
12:19:44  7   9.22
12:19:43  7   8.05
12:18 HPS 87/09/15 #10
```

Begin reverse slug test

12:39 HRS 87/09/15 #10

STATION ID = 10

12:39:33	7	9.65
12:39:31	7	9.65
12:39:29	7	9.65
12:39:27	7	9.65
12:39:25	7	9.65
12:39:23	7	9.65
12:39:21	7	9.65
12:39:19	7	9.65
12:39:17	7	9.65
12:39:15	7	9.65
12:39:13	7	9.65
12:39:11	7	9.65
12:39:09	7	9.65
12:39:07	7	9.65
12:39:05	7	9.65
12:39:03	7	9.65
12:39:01	7	9.65
12:38:59	7	9.65
12:38:57	7	9.62
12:38:55	7	9.67
12:38:53	7	9.67
12:38:52	7	9.62
12:38:51	7	9.60
12:38:50	7	9.62
12:38:49	7	9.70
12:38:48	7	9.75
12:38:47	7	9.72
12:38:46	7	9.62
12:38:45	7	9.50
12:38:44	7	9.52
12:38:43	7	9.70
12:38:42	7	9.90
12:38:41	7	9.87
12:38:40	7	9.60
12:38:39	7	9.25
12:38:38	7	9.25
12:38:37	7	9.72
12:38:36	7	10.30
12:38:35	7	10.32
12:38:34	7	9.52
12:38:33	7	8.60

12:38 HRS 87/09/15 #10

Begin slug test

STATION ID = 10

12:38:04	7	9.65
12:38:02	7	9.65
12:38:00	7	9.65
12:37:58	7	9.65
12:37:56	7	9.65
12:37:54	7	9.65
12:37:52	7	9.65
12:37:50	7	9.65
12:37:48	7	9.65
12:37:46	7	9.67
12:37:45	7	9.67
12:37:44	7	9.65
12:37:43	7	9.62
12:37:42	7	9.62
12:37:41	7	9.65
12:37:40	7	9.70
12:37:39	7	9.72
12:37:38	7	9.70
12:37:37	7	9.62
12:37:36	7	9.55
12:37:35	7	9.55
12:37:34	7	9.67
12:37:33	7	9.85
12:37:32	7	9.90
12:37:31	7	9.75
12:37:30	7	9.47
12:37:29	7	9.12
12:37:28	7	9.30
12:37:27	7	11.12
12:37:26	7	9.65

12:37 HRS 87/09/15 #10

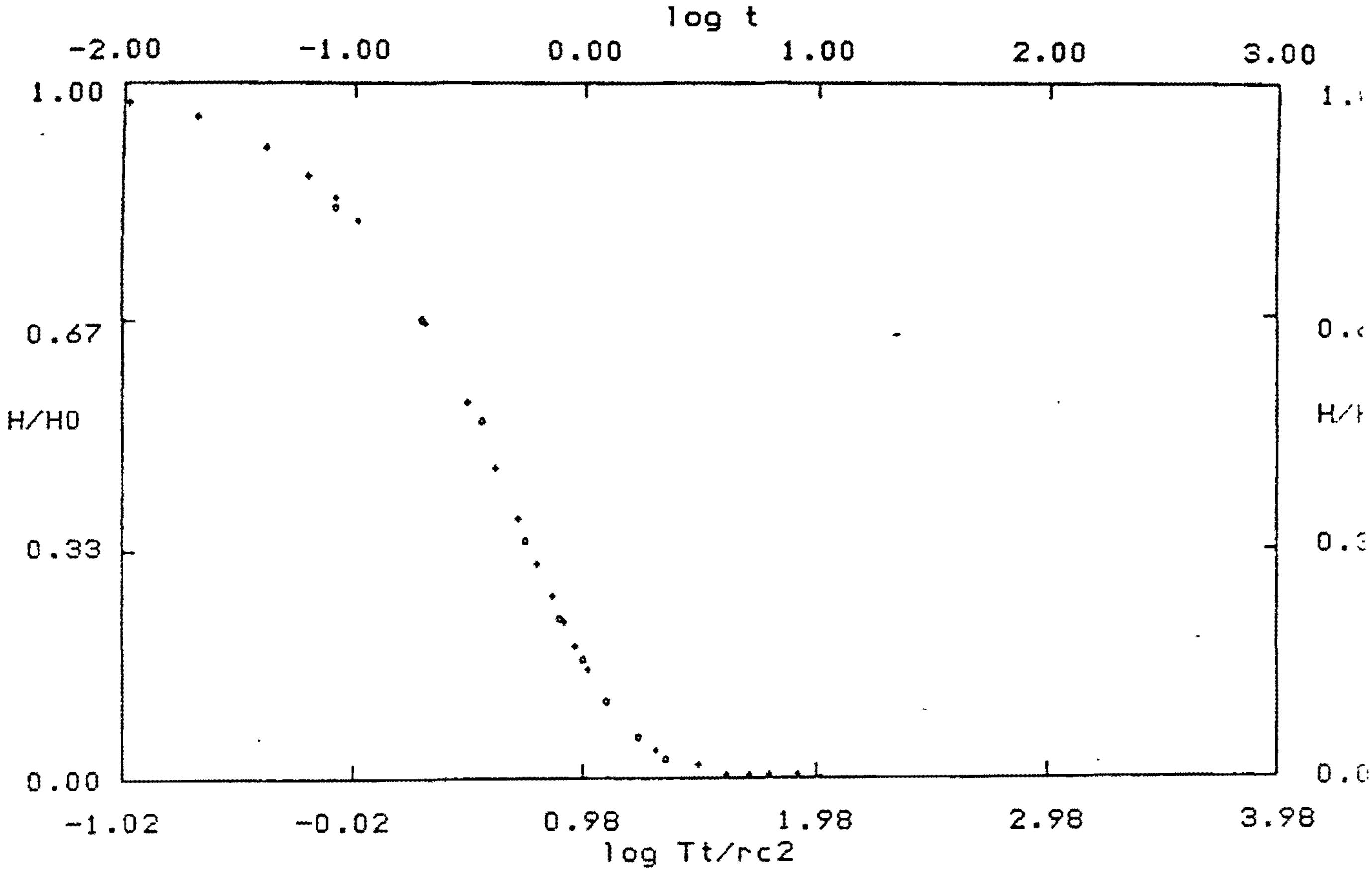
Begin reverse slug test

Data for Slug Injection/Withdrawal Test

Well Name: V1 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.04 cu.ft.
Effective Radius of Well = 0.33 feet
Radius of Casing(rc) over Water Level Decline = 0.08 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
********	************	************	************	************
1		7.000		
2	0.000	8.720	1.720	1.000
3	0.083	8.420	1.420	0.826
4	0.200	8.150	1.150	0.669
5	0.367	7.900	0.900	0.523
6	0.567	7.600	0.600	0.349
7	0.800	7.400	0.400	0.233
8	1.000	7.300	0.300	0.174
9	1.250	7.200	0.200	0.116
10	1.750	7.100	0.100	0.058
11	2.300	7.050	0.050	0.029

SLUG TEST DATA (V1)



o - Data

+ - Type Curve
Slug Test: alpha = -8.0

SOLUTION

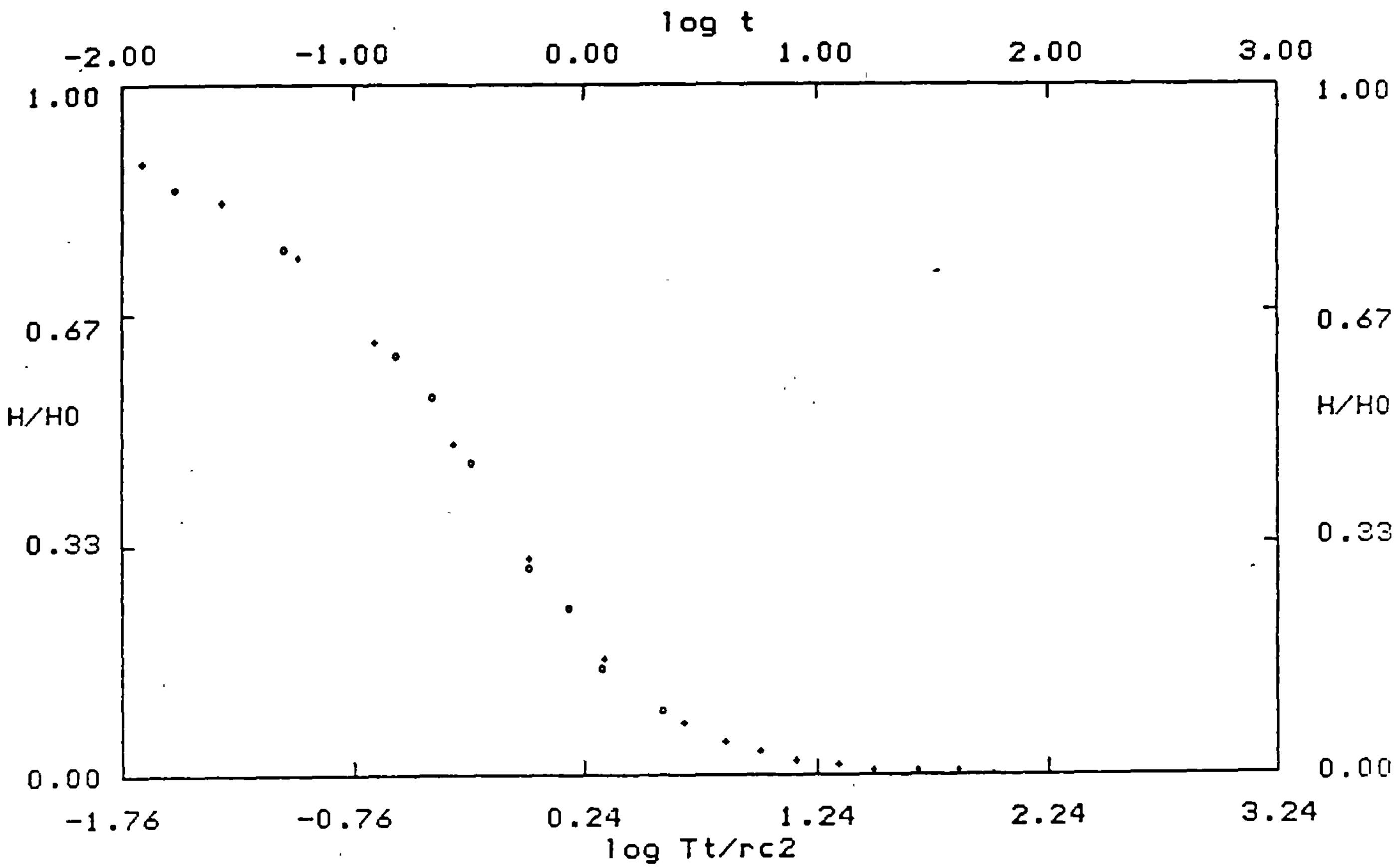
Transmissivity = 6.112E-02 ft.2/min.
Storativity = 5.877E-10

Data for Slug Injection/Withdrawal Test

Well Name: V2 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.04 cu.ft.
Effective Radius of Well = 0.33 feet
Radius of Casing(rc) over Water Level Decline = 0.20 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
1		6.920		
2	0.000	7.250	0.330	1.000
3	0.017	7.200	0.280	0.848
4	0.050	7.170	0.250	0.758
5	0.150	7.120	0.200	0.606
6	0.220	7.100	0.180	0.545
7	0.320	7.070	0.150	0.455
8	0.520	7.020	0.100	0.303
9	0.850	7.000	0.080	0.242
10	1.200	6.970	0.050	0.152
11	2.200	6.950	0.030	0.091

SLUG TEST DATA (V2)



o - Data

+ - Type Curve
Slug Test: alpha = -1.0

SOLUTION

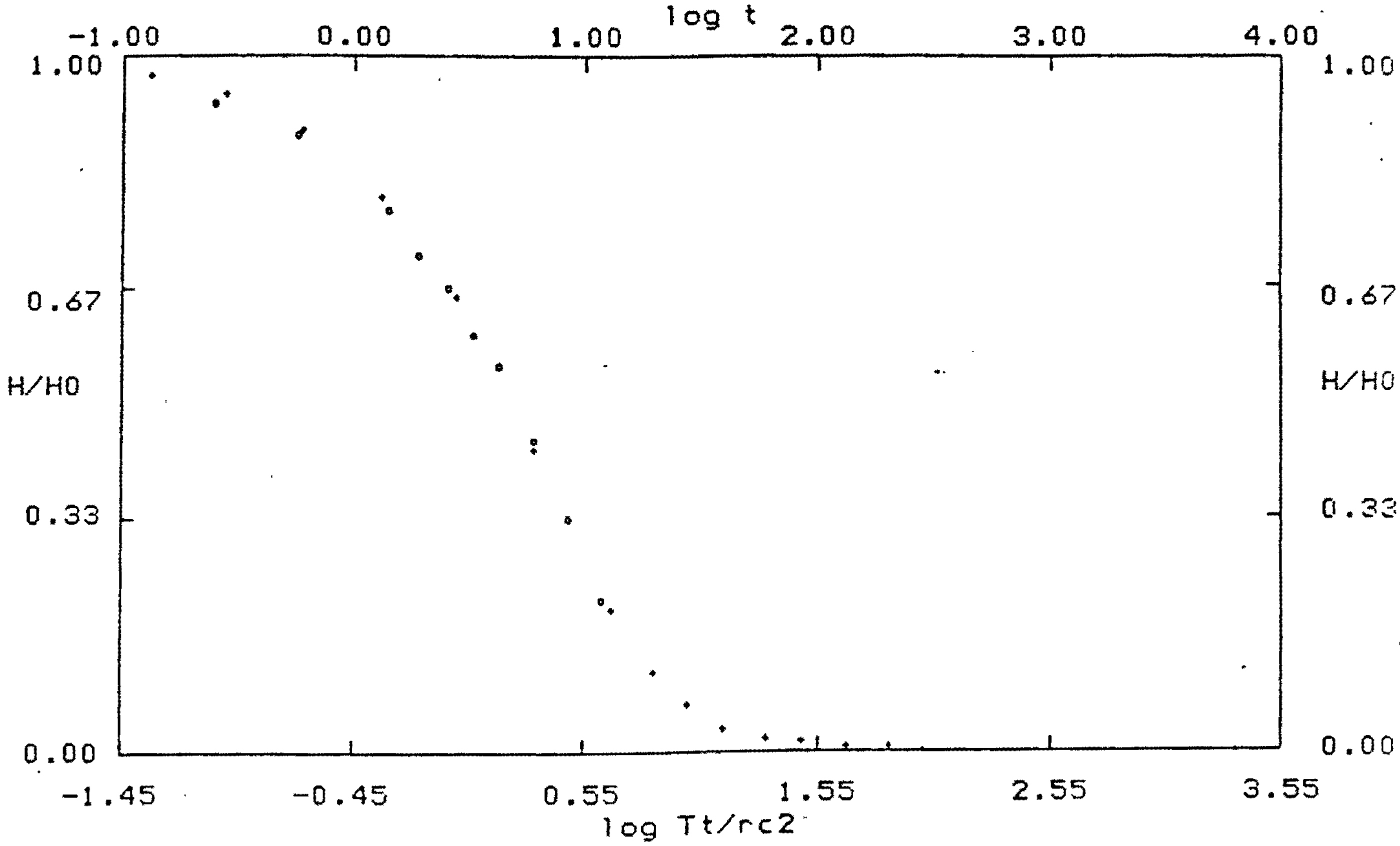
Transmissivity = 6.951E-02 ft.2/min.
Storativity = 3.673E-02

Data for Slug Injection/Withdrawal Test

Well Name: V3 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.09 cu.ft.
Effective Radius of Well = 0.42 feet
Radius of Casing(rc) over Water Level Decline = 0.29 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
********	************	************	************	************
1		5.850		
2	0.000	6.300	0.450	1.000
3	0.250	6.270	0.420	0.933
4	0.580	6.250	0.400	0.889
5	1.420	6.200	0.350	0.778
6	1.920	6.170	0.320	0.711
7	2.580	6.150	0.300	0.667
8	3.330	6.120	0.270	0.600
9	4.250	6.100	0.250	0.556
10	6.080	6.050	0.200	0.444
11	8.580	6.000	0.150	0.333
12	12.080	5.950	0.100	0.222

SLUG TEST DATA (V3)



o - Data

+ - Type Curve
Slug Test: alpha = -4.0

SOLUTION

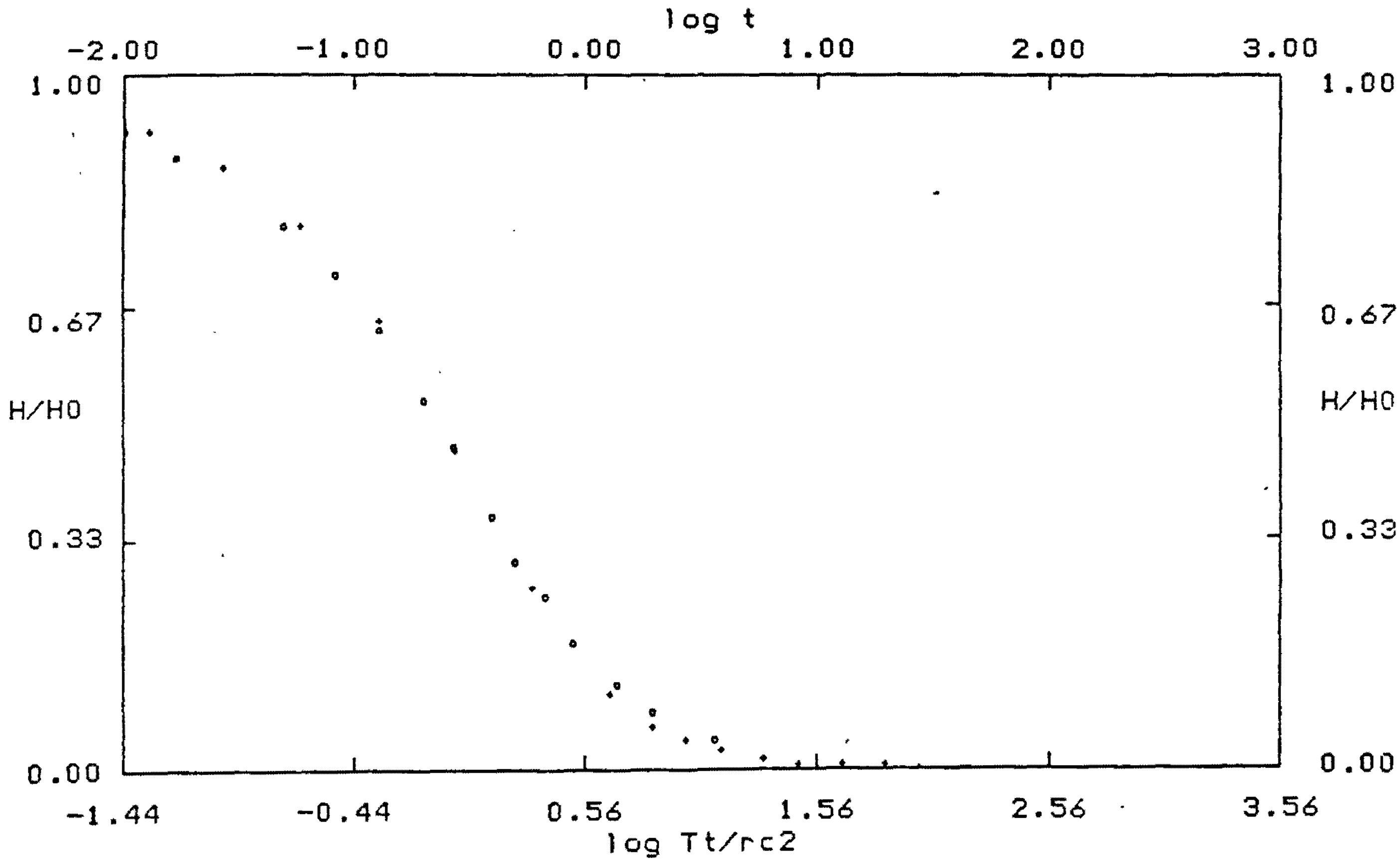
Transmissivity = 2.984E-02 ft.2/min.
Storativity = 4.768E-05

Data for Slug Injection/Withdrawal Test

Well Name: V4 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.10 cu.ft.
Effective Radius of Well = 0.42 feet
Radius of Casing(rc) over Water Level Decline = 0.17 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
********	************	************	************	************
1		9.050		
2	0.000	10.270	1.220	1.000
3	0.017	10.120	1.070	0.877
4	0.050	10.000	0.950	0.779
5	0.083	9.920	0.870	0.713
6	0.130	9.820	0.770	0.631
7	0.200	9.700	0.650	0.533
8	0.270	9.620	0.570	0.467
9	0.400	9.500	0.450	0.369
10	0.500	9.420	0.370	0.303
11	0.670	9.350	0.300	0.246
12	0.900	9.270	0.220	0.180
13	1.380	9.200	0.150	0.123
14	1.970	9.150	0.100	0.082
15	3.630	9.100	0.050	0.041

SLUG TEST DATA (V4)



o - Data

+ - Type Curve
Slug Test: alpha = -2.0

SOLUTION

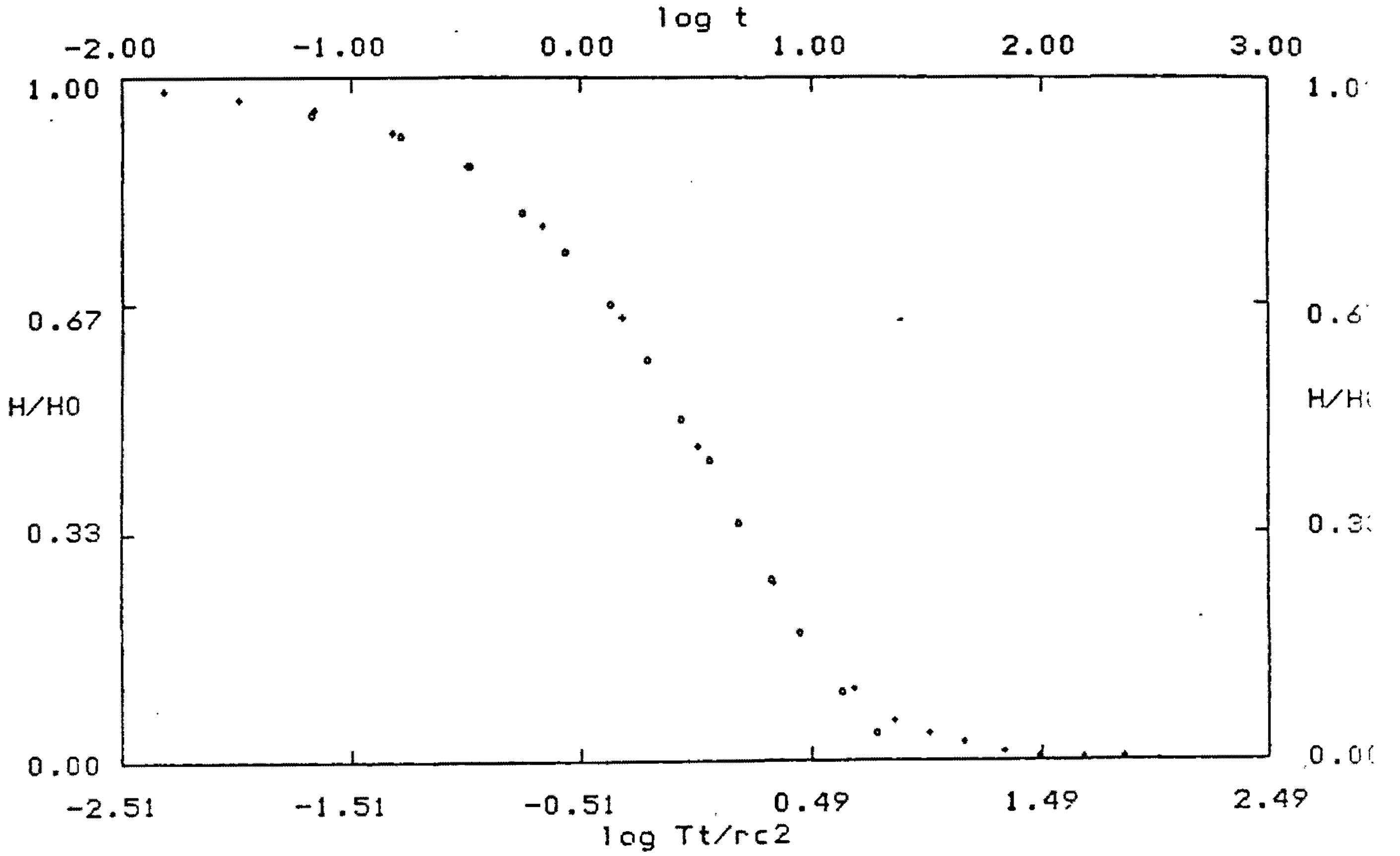
Transmissivity = 1.049E-01 ft.2/min.
Storativity = 1.638E-03

Data for Slug Injection/Withdrawal Test

Well Name: V5 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.04 cu.ft.
Effective Radius of Well = 0.33 feet
Radius of Casing(rc) over Water Level Decline = 0.08 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
********	************	************	************	************
1		7.370		
2	0.000	9.370	2.000	1.000
3	0.067	9.270	1.900	0.950
4	0.167	9.200	1.830	0.915
5	0.333	9.100	1.730	0.865
6	0.567	8.970	1.600	0.800
7	0.867	8.850	1.480	0.740
8	1.350	8.700	1.330	0.665
9	1.930	8.550	1.180	0.590
10	2.770	8.370	1.000	0.500
11	3.600	8.250	0.880	0.440
12	4.930	8.070	0.700	0.350
13	6.770	7.900	0.530	0.265
14	8.930	7.750	0.380	0.190
15	13.430	7.570	0.200	0.100
16	18.933	7.450	0.080	0.040

SLUG TEST DATA (V5)



o - Data

+ - Type Curve
Slug Test: alpha = -2.0

SOLUTION

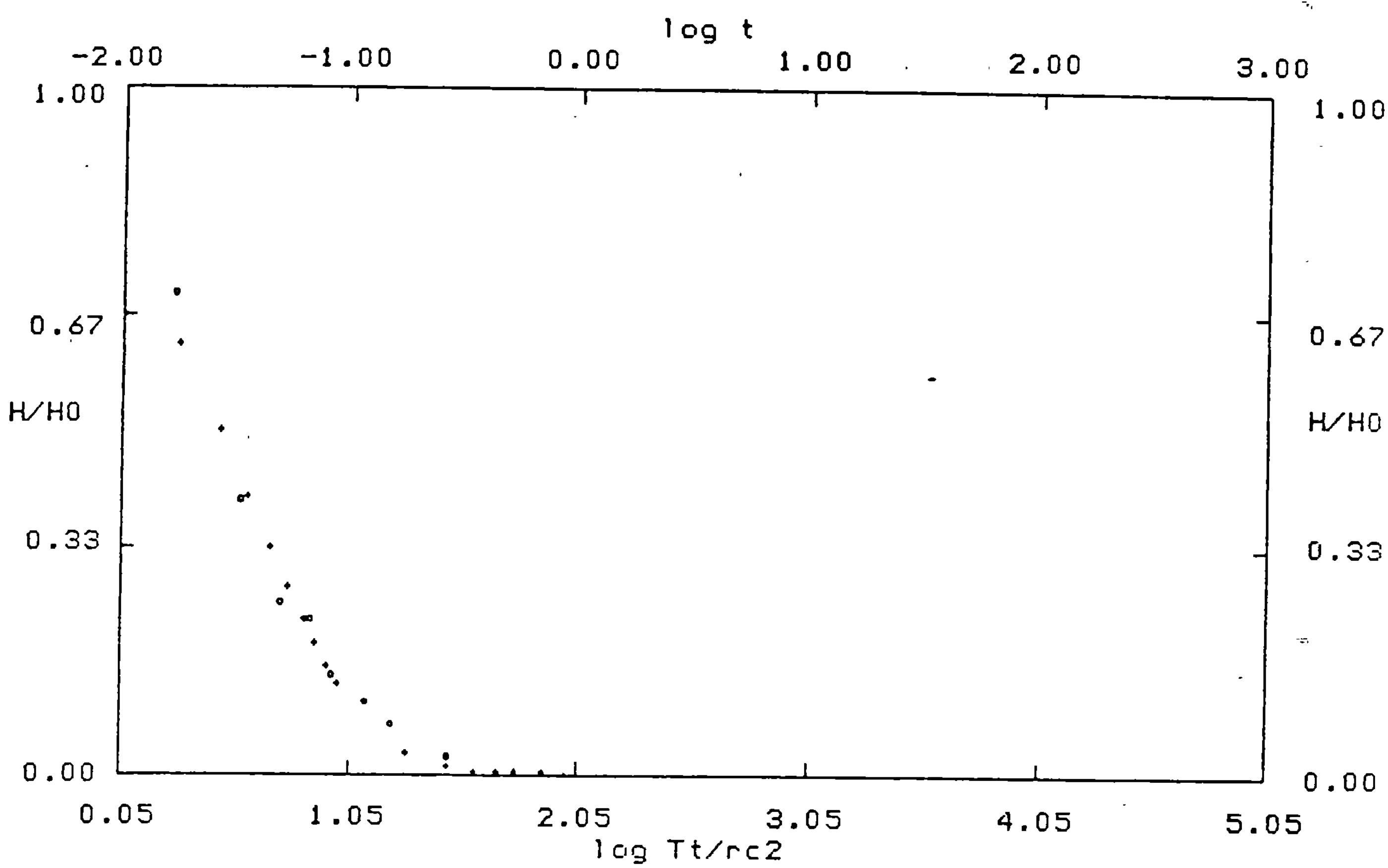
Transmissivity = 1.978E-03 ft.2/min.
Storativity = 5.877E-04

Data for Slug Injection/Withdrawal Test

Well Name: V6 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.01 cu.ft.
Effective Radius of Well = 0.33 feet
Radius of Casing(rc) over Water Level Decline = 0.08 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
*******	***********	***********	***********	***********
1		8.600		
2	0.000	9.270	0.670	1.000
3	0.017	9.070	0.470	0.701
4	0.033	8.870	0.270	0.403
5	0.050	8.770	0.170	0.254
6	0.067	8.750	0.150	0.224
7	0.083	8.700	0.100	0.149
8	0.117	8.670	0.070	0.104
9	0.150	8.650	0.050	0.075
10	0.267	8.620	0.020	0.030

SLUG TEST DATA (V6)



o - Data

+ - Type Curve
Slug Test: alpha = -7.0

SOLUTION

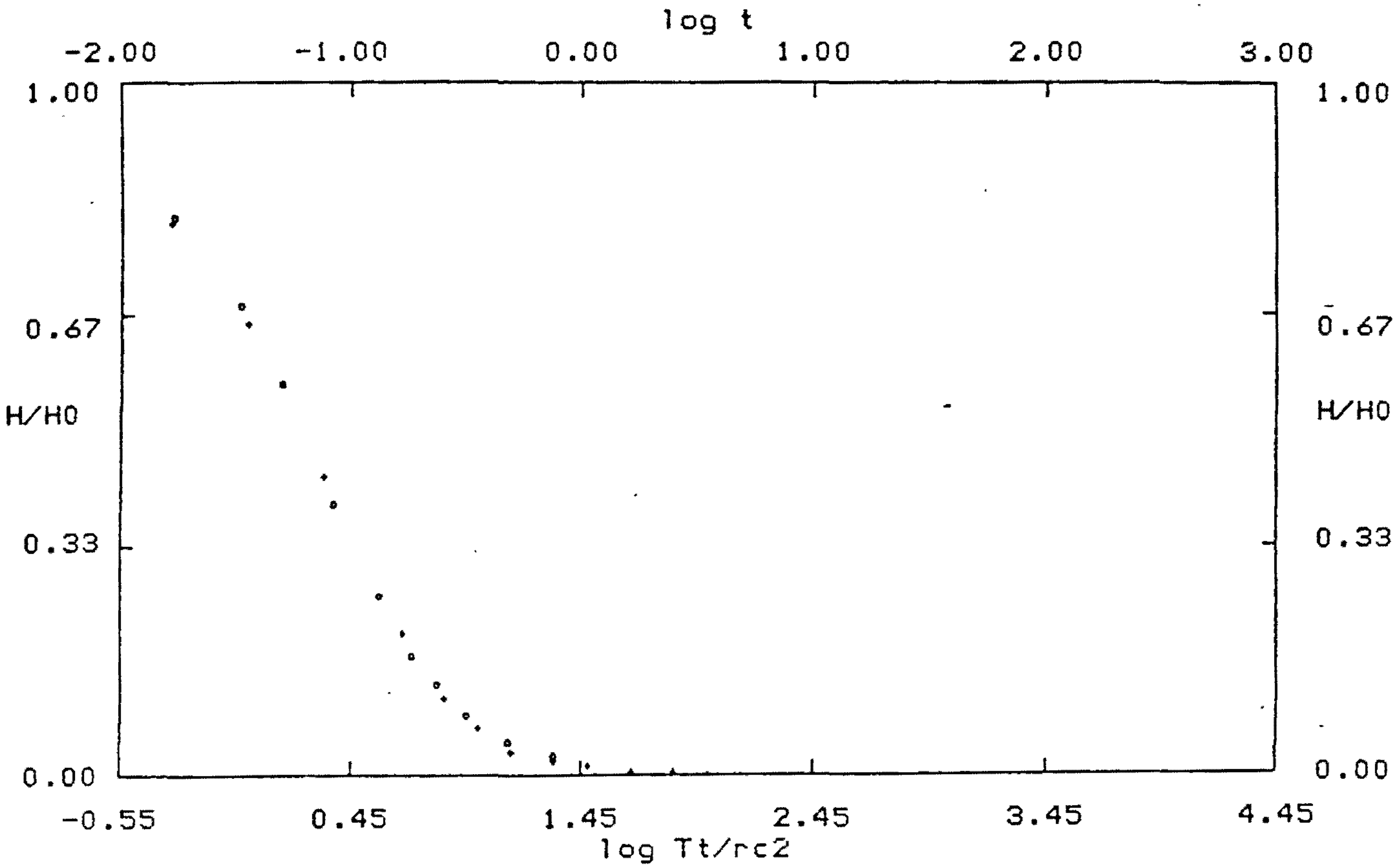
Transmissivity = 7.181E-01 ft.2/min.
Storativity = 5.877E-09

Data for Slug Injection/Withdrawal Test

Well Name: V7 Date of Test: 9/15/87
Well Number: 1
Change in Vol.of Water = 0.02 cu.ft.
Effective Radius of Well = 0.33 feet
Radius of Casing(rc) over Water Level Decline = 0.08 feet

Entry No.	Time(t) (min.)	Head (ft.)	H (ft.)	H/H0
********	************	************	************	************
1		8.520		
2	0.000	9.670	1.150	1.000
3	0.017	9.450	0.930	0.809
4	0.033	9.300	0.780	0.678
5	0.050	9.170	0.650	0.565
6	0.083	8.970	0.450	0.391
7	0.133	8.820	0.300	0.261
8	0.183	8.720	0.200	0.174
9	0.233	8.670	0.150	0.130
10	0.317	8.620	0.100	0.087
11	0.483	8.570	0.050	0.043
12	0.750	8.550	0.030	0.026

SLUG TEST DATA (V7)



o - Data

\+ - Type Curve
Slug Test: alpha = -4.0

SOLUTION

Transmissivity = 1.804E-01 ft.2/min.
Storativity = 5.877E-06

Wahler Associates

CALCULATION SHEET

SHEET 1 OF 3 SHEETS

PROJECT Jasco Chemical Corporation PROJECT NO. JCO-104H

SUBJECT Slug Test Calculation

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE 9/15/87

Hydraulic Conductivity Calculations :

$$K = \frac{T}{b}$$

Well no:

V-1 : $K = 6.11 \times 10^{-2} / 22 = 2.78 \times 10^{-3}$ ft/min $= 1.42 \times 10^{-3}$ cm

V-2 : $K = 6.95 \times 10^{-2} / 12 = 5.79 \times 10^{-3}$ ft/min $= 2.95 \times 10^{-3}$ cm/sec

V-3 : $K = 2.98 \times 10^{-2} / 12 = 2.48 \times 10^{-3}$ ft/min $= 1.27 \times 10^{-3}$ cm/sec

V-4 : $K = 1.05 \times 10^{-1} / 7 = 1.5 \times 10^{-2}$ ft/min $= 7.65 \times 10^{-3}$ cm/sec

V-5* (low) : $K = 1.98 \times 10^{-3} / 3 = 6.6 \times 10^{-4}$ ft/min $= 3.37 \times 10^{-4}$ cm/sec

V-6* (high) : $K = 7.18 \times 10^{-1} / 7 = 1.03 \times 10^{-1}$ ft/min $= 5.23 \times 10^{-2}$ cm/sec

V-7 : $K = 1.8 \times 10^{-1} / 13.5 = 1.33 \times 10^{-2}$ ft/min $= 6.80 \times 10^{-3}$ cm/sec

* Conductivity values used to determine velocity ranges.

Wahler Associates

CALCULATION SHEET

SHEET 2 OF 3 SHEETS

PROJECT Josco Chemical Corporation PROJECT NO. JCO-104-H

SUBJECT Slug Test Calculation

FILE

CALCULATED BY D.S. CHECKED BY A.C. DATE 9/15/87

Seepage Velocity :

$$V = K \frac{dh}{dl} \frac{1}{n}$$

$\frac{dh}{dl} = 0.004$

$n = 0.4$

K ranges from 6.6×10^{-4} ft/min to 1.03×10^{-1} ft/min.

Average $K = 2.04 \times 10^{-2}$ ft/min

Lowest V (V-5)

$V = 6.6 \times 10^{-4} \times 0.004 \times \frac{1}{0.4}$

$V = 6.6 \times 10^{-6}$ ft/min

Low $\underline{V = 3.5 \text{ ft/yr}}$

Highest V (V-6)

$V = 1.03 \times 10^{-1} \times 0.004 \times \frac{1}{0.4}$

$= 1.03 \times 10^{-3}$ ft/min

High $\underline{V = 541.4 \text{ ft/yr}}$

Average V

$V = 2.04 \times 10^{-2} \times 0.004 \times \frac{1}{0.4}$

Average $\underline{V = 107.2 \text{ ft/yr}}$

Wahler Associates

CALCULATION SHEET

SHEET 3 OF 3 SHEETS

PROJECT ________ PROJECT NO. JCO-104 H

SUBJECT Slug Test Calculations

FILE ________

CALCULATED BY D.S. CHECKED BY A.C. DATE 9/15/87

Other seepage velocities:

V-1: $V = (2.15 \times 10^{-3} \times 0.004 \times 1/0.4)$ ft/min = 14.6 ft/yr

V-2: $v = (5.79 \times 10^{-3} \times 0.004 \times 1/0.4)$ ft/min = 30.4 ft/yr

V-3: $V = (2.48 \times 10^{-3} \times 0.004 \times 1/0.4)$ ft/min = 13.0 ft/yr

V-4: $V = (1.5 \times 10^{-2} \times 0.004 \times 1/0.4)$ ft/min = 78.8 ft/yr

V-7: $V = (1.33 \times 10^{-2} \times 0.004 \times 1/0.4)$ ft/min = 70.0 ft/yr

APPENDIX E
LABORATORY REPORTS AND QA/QC OF SOIL ANALYSES OF PREVIOUS INVESTIGATIONS

5.54
V-1

TABLE 1

Results Of Chemical Analysis

Analyte	Soil Composite (ug/Kg)	Water (ug/L)	Field Blank (ug/L)
Pentachlorophenol	<10	0.2	<0.1
Purgeable Solvents:			
Requested Compounds			
Acetone	<20	98	<10
Deodorized Kerosene[1]	<1000	<200	<200
Dichloromethane	<20	<5	<5
Ethanol	<100	<20	<20
Isopropanol	<100	<30	<30
Lacquer Thinner[2]	<20	<5	<5
Methanol	<100	95	<30
Paint Thinner[3]	<600	860	<100
Other Compounds[4]			
Methyl ethyl ketone	<30	4	<4
1, 1, 1-Trichloroethane	<5	9	<1
Trichloroethylene	<5	<9	<1
Unidentified peaks	0	0	0

ug? L? solid made?

1. Parks brand deodorized kerosene
2. JASCO brand lacquer thinner
3. Parks brand paint thinner
4. Compounds detected in samples, but not reportedly stored on JASCO site

ANATEC
LABORATORIES
INC.

435 Tesconi Circle • Santa Rosa, California 95401 • 707-526-7200

Patrick Casey
Questa Engineering
PO Box 356
Pt. Richmond, CA 94807

October 6, 1986986
ANATEC Log No: 8289 (1-3)
Series No: 216/006
Client Ref: (V) P. Casey

Subject: Analysis of Two Soil and One Water Samples Received August 27, 1986

Dear Mr. Casey:

Analysis of the samples referenced above has been completed. Samples were received by the laboratory in insulated shipping containers. During the laboratory log-in process, samples were noted to be cool, intact and completely and legibly labeled. Each of the soil samples were submitted as three brass rings with directions to form one composite sample for analysis, respectively. The water sample was submitted in each of two types of containers; these were 40-milliliter glass vials with Teflon septa and plastic screw caps, and one-liter amber glass bottles with Teflon capliners and plastic screw caps. The water sample and composite soil sample were analyzed to measure a variety of volatile species including individual compounds and three complex hydrocarbon mixtures. Contents of one-liter bottles were analyzed to measure pentachlorophenol.

Volatile species measurements were made by purge-and-trap sampling gas chromatography. Briefly, reagent helium is bubbled through five milliliter portions of water sample or soil sample-water slurries in a closed system. Helium and volatile organic compounds thus sparged from the sample pass through a "trap" containing various sorbents which retain organic compounds. The trap is subsequently heated and organic compounds thereby desorbed are swept onto the analytical column of a gas chromatograph equipped with a flame ionization detector. Preparation and analysis of samples is accompanied by similar treatment of standards and sample spikes prepared with neat, reagent grade compounds, or, in the case of complex mixtures, reference samples of those mixtures supplied previously with samples. Identification of compounds is based on both absolute and relative retention times; quantitation is based on ratios of sample and standard peak areas (i.e., "external standardization").

Pentachlorophenol analyses were conducted by gas chromatography of the acetate derivative produced by reaction with acetic anhydride. Derivatives are identified and quantitated as for volatile analytes except that the process is conducted with an electron capture rather than flame ionization detector.

Results of testing are summarized in Table 1. Please feel welcome to contact us should you have questions regarding procedures or results.

Sincerely,

Greg Anderson, Director
Analytical Laboratories

Table 1. Summarized Testing Results[1]

Analyte	Descriptor, Lab No. & Results: 5 to 15 feet Composite (Soil) (8289-1, -2,-3)	20 to 35 feet Composite (Soil) (8289-4,-5,-6)	V32 (Water) (8289-7, -8,-9,-11)
Deodorized kerosene	<400	<400	<100
Lacquer thinner	<200	<200	<50
Paint thinner	1200	<400	<100
Methyl alcohol	<120	<120	<30
Ethyl alcohol	<120	<120	<20
Isopropyl alcohol	<120	<120	<20
Dichloromethane	<50	<50	3200
Acetone	<100	<100	<15
Methyl ethyl ketone	<100	<100	<15
1,1,1-trichloroethane	<50	<50	<6
Trichloroethylene	<50	<50	<6
Pentachlorophenol	200	8.6	1.5

[1]Results are expressed in units of micrograms analyte per kilogram soil sample, as received basis, and micrograms analyte per liter water sample.

Table 2

WESCO Laboratories

Date: December 1, 1986

Client: Questa Engineering

Submitted by: Pat Casey

Report to: Pat Casey

WESCO Job #: QEA 8616

Client Job/P.O. #: Solvent Mix 11/5/86

Date collected: 11-05-86

Date submitted: 11-05-86

& type of sample(s): 5 Water
9 Soil

1-3 ?
depth ?

Lab No.	Client ID	Acetone (mg/kg	Lacquer Thinner (mg/kg)	CH2Cl2 (ug/kg)			
6049	Soil V-AC Fill	2,190	N/A	N/A			
6050	Soil V-AC Pump	< 1	N/A	N/A			
6051	Soil V-LT Fill	N/A	40	N/A			
6052	Soil V-LT Pump	N/A	280*	N/A			
6053	Soil V-MC Fill	N/A	N/A	77			
6054	Soil V-MC Pump	N/A	N/A	7.2			
	METHOD(S):	Note 1	Note 2	Note 3			

NOTES:

Note 1 - EPA Method 8015.
Note 2 - EPA Method 5020.
Note 3 - EPA Method 601.
*Predominantly paint thinner; quantified as paint thinner.

Analytical Supervisor

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Table 1

WESCO Laboratories

Date: December 1, 1986
Client: Questa Engineering
Submitted by: Pat Casey
Report to: Pat Casey
WESCO Job #: QEA 8616

Client Job/P.O. #: Solvent Mixes 11/5/86
Date collected: 11-05-86
Date submitted: 11-05-86
& type of sample(s): 5 Water
9 Soil

ANALYTE	NOTE	LAB NUMBERS / CLIENT ID		
		6046 Soil V-3 (5&10')	6047 Soil V-3 (13-19')	6048 Soil V-3 (36')
CH2Cl2 (ug/kg)	1	< 25	< 5	< 5
TCE (ug/kg)	1	< 25	< 5	< 5
1,1,1 TCA (ug/kg)	1	< 25	< 5	< 5
Methyl ethyl ketone (mg/kg)	2	< 1	< 1	< 1
Methanol (mg/kg)	2	5.8	4.4	5.0
Ethanol (mg/kg)	2	< 1	< 1	< 1
Acetone (mg/kg)	2	1.9	< 1	1.8
Isopropanol (mg/kg)	2	2.5	1.2	2.4
Lacquer Thinner (mg/kg)	3	< 0.050	< 0.050	< 0.42*
Paint Thinner (mg/kg)	3	< 0.050	< 0.050	< 0.050
Kerosene (mg/kg)	3	< 0.100	< 0.100	< 0.100

METHOD(S):
Note 1 - EPA Method 601.
Note 2 - EPA Method 8015.
Note 3 - EPA Method 5020.
*Tentative identification.

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Wahler Associates
1023 Corporation Way
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Attn: Bob Breynaert

Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061433	Soil, #B-1, R-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Compound	Result	Compound	Result
Acrolein	-	trans-1,2-Dichloroethene	< 50
Acrylonitrile	-	1,2-Dichloropropane	< 50
Benzene	-	1,3-Dichloropropene	< 50
Bromomethane	< 50	Ethylbenzene	-
Bromodichloromethane	< 50	Methylene chloride	410
Bromoform	< 50	1,1,2,2-Tetrachloroethane	< 50
Carbon tetrachloride	< 50	Tetrachloroethene	< 50
Chlorobenzene	-	1,1,1-Trichloroethane	280
Chloroethane	< 50	1,1,2-Trichloroethane	< 50
2-Chloroethylvinyl ether	< 50	Trichloroethene	< 50
Chloroform	< 50	Toluene	-
Chloromethane	< 50	Vinyl chloride	< 50
Dibromochloromethane	< 50	1,2-Dichlorobenzene	< 50
1,1-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,4-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50		

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Arthur G. Burton
Laboratory Director

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061434	Soil, #B-1, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50

trans-1,2-Dichloroethene	<	5
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride	<	5
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	5
1,1,1-Trichloroethane	<	5
1,1,2-Trichloroethane	<	50
Trichloroethene	<	5
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	5
1,3-Dichlorobenzene	<	5
1,4-Dichlorobenzene	<	50

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061435	Soil, #B-2, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	-
Acrylonitrile	-
Benzene	-
Bromomethane	< 50
Bromodichloromethane	< 50
Bromoform	< 50
Carbon tetrachloride	< 50
Chlorobenzene	-
Chloroethane	< 50
2-Chloroethylvinyl ether	< 50
Chloroform	< 50
Chloromethane	< 50
Dibromochloromethane	< 50
1,1-Dichloroethane	< 50
1,2-Dichloroethane	< 50
1,1-Dichloroethene	< 50
trans-1,2-Dichloroethene	< 50
1,2-Dichloropropane	< 50
1,3-Dichloropropene	< 50
Ethylbenzene	-
Methylene chloride	1,100
1,1,2,2-Tetrachloroethane	< 50
Tetrachloroethene	< 50
1,1,1-Trichloroethane	< 50
1,1,2-Trichloroethane	< 50
Trichloroethene	< 50
Toluene	-
Vinyl chloride	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104B

Sample Number: 7061435

Sample Description: Soil, #B-2, R-1

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8140 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061435	Soil, #B-2, R-1

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061436	Soil, #B-2, R-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride	<	50
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane	<	50
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

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Arthur G. Burton
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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061437	Soil, #B-2, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	5
Acrylonitrile		-	1,2-Dichloropropane	<	50
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		-
Bromodichloromethane	<	50	Methylene chloride	<	50
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	5
Chlorobenzene		-	1,1,1-Trichloroethane	<	50
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	5
Chloroform	<	50	Toluene		-
Chloromethane	<	50	Vinyl chloride	<	50
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	5
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	5
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	50
1,1-Dichloroethene	<	50			

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061438

Sample Description: Soil, #B-2, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride		1,000
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane		110
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

1,000

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Arthur G. Burton
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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061438	Soil, #B-2, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061438	Soil, #B-2, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061439	Soil, #B-3, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50

trans-1,2-Dichloroethene	<	[illegible]
1,2-Dichloropropane	<	5
1,3-Dichloropropene	<	5
Ethylbenzene		[illegible]
Methylene chloride		2,40[illegible]
1,1,2,2-Tetrachloroethane	<	5
Tetrachloroethene	<	[illegible]
1,1,1-Trichloroethane		5[illegible]
1,1,2-Trichloroethane	<	5
Trichloroethene	<	[illegible]
Toluene		[illegible]
Vinyl chloride	<	5
1,2-Dichlorobenzene	<	[illegible]
1,3-Dichlorobenzene	<	[illegible]
1,4-Dichlorobenzene	<	[illegible]

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Date Sampled: 06/10 87
Date Received: 06/10.87
Date Extracted: 06/19 87
Date Reported: 06/26.87
Project No. JCO-104E

Sample Number	Sample Description
7061439	Soil, #B-3, R-1

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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Attn: Bob Breynaert

Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061439

Sample Description: Soil, #B-3, R-1

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061440

Sample Description: Soil, #B-3, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	5
Acrylonitrile		-	1,2-Dichloropropane	<	5
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		-
Bromodichloromethane	<	50	Methylene chloride	<	5
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	5
Chlorobenzene		-	1,1,1-Trichloroethane	<	5
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	5
Chloroform	<	50	Toluene		-
Chloromethane	<	50	Vinyl chloride	<	5
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	5
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	5
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	5
1,1-Dichloroethene	<	50			

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

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NOTE: Method 8010 of the EPA was used for this analysis.

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Attn: Bob Breynaert

Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061441	Soil, #B-3, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	
Acrylonitrile		-	1,2-Dichloropropane	<	
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		
Bromodichloromethane	<	50	Methylene chloride		3
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	
Chlorobenzene		-	1,1,1-Trichloroethane		1
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	
Chloroform	<	50	Toluene		
Chloromethane	<	50	Vinyl chloride	<	5
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	5
1,1-Dichloroethene	<	50			

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SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061441	Soil, #B-3, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061441	Soil, #B-3, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061442	Soil, #B-4, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	5[illegible]
1,2-Dichloropropane	<	5[illegible]
1,3-Dichloropropene	<	5[illegible]
Ethylbenzene		-
Methylene chloride		1,10[illegible]
1,1,2,2-Tetrachloroethane	<	5[illegible]
Tetrachloroethene	<	5[illegible]
1,1,1-Trichloroethane	<	5[illegible]
1,1,2-Trichloroethane	<	5[illegible]
Trichloroethene	<	5[illegible]
Toluene		-
Vinyl chloride	<	5[illegible]
1,2-Dichlorobenzene	<	5[illegible]
1,3-Dichlorobenzene	<	5[illegible]
1,4-Dichlorobenzene	<	5[illegible]

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SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061442	Soil, #B-4, R-1

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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Arthur G. Burton
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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061442	Soil, #B-4, R-1

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06 10 8[illegible]
Date Received: 06 10 8[illegible]
Date Extracted: 06 23 8[illegible]
Date Reported: 06 26 8[illegible]
Project No. JCO-104[illegible]

Sample Number

7061443

Sample Description

Soil, #B-4, R-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	[illegible]
1,2-Dichloropropane	<	5[illegible]
1,3-Dichloropropene	<	[illegible]
Ethylbenzene		[illegible]
Methylene chloride	<	5[illegible]
1,1,2,2-Tetrachloroethane	<	[illegible]
Tetrachloroethene	<	[illegible]
1,1,1-Trichloroethane	<	5[illegible]
1,1,2-Trichloroethane	<	[illegible]
Trichloroethene	<	[illegible]
Toluene		-
Vinyl chloride	<	5[illegible]
1,2-Dichlorobenzene	<	[illegible]
1,3-Dichlorobenzene	<	5[illegible]
1,4-Dichlorobenzene	<	5[illegible]

NOTE: Method 8010 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061444

Sample Description: Soil, #B-4, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	-		trans-1,2-Dichloroethene	< 50
Acrylonitrile	-		1,2-Dichloropropane	< 50
Benzene	-		1,3-Dichloropropene	< 50
Bromomethane	<	50	Ethylbenzene	-
Bromodichloromethane	<	50	Methylene chloride	190
Bromoform	<	50	1,1,2,2-Tetrachloroethane	< 50
Carbon tetrachloride	<	50	Tetrachloroethene	< 50
Chlorobenzene	-		1,1,1-Trichloroethane	< 50
Chloroethane	<	50	1,1,2-Trichloroethane	< 50
2-Chloroethylvinyl ether	<	50	Trichloroethene	< 50
Chloroform	<	50	Toluene	-
Chloromethane	<	50	Vinyl chloride	< 50
Dibromochloromethane	<	50	1,2-Dichlorobenzene	< 50
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	< 50
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	< 50
1,1-Dichloroethene	<	50		

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NOTE: Method 8010 of the EPA was used for this analysis.

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Project No. JCO-104H

Sample Number
7C61445

Sample Description
Soil, #B-4, R-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein........................		-
Acrylonitrile....................		-
Benzene.........................		-
Bromomethane....................	<	50
Bromodichloromethane.............	<	50
Bromoform.......................	<	50
Carbon tetrachloride.............	<	50
Chlorobenzene....................		-
Chloroethane.....................	<	50
2-Chloroethylvinyl ether.........	<	50
Chloroform......................	<	50
Chloromethane....................	<	50
Dibromochloromethane.............	<	50
1,1-Dichloroethane...............	<	50
1,2-Dichloroethane...............	<	50
1,1-Dichloroethene...............	<	50
trans-1,2-Dichloroethene..............	<	[illegible]
1,2-Dichloropropane...................	<	5
1,3-Dichloropropene...................	<	[illegible]
Ethylbenzene..........................		[illegible]
Methylene chloride....................	<	5
1,1,2,2-Tetrachloroethane.............	<	[illegible]
Tetrachloroethene.....................	<	[illegible]
1,1,1-Trichloroethane.................	<	5
1,1,2-Trichloroethane.................	<	[illegible]
Trichloroethene.......................	<	[illegible]
Toluene...............................		-
Vinyl chloride........................	<	5
1,2-Dichlorobenzene...................	<	[illegible]
1,3-Dichlorobenzene...................	<	[illegible]
1,4-Dichlorobenzene...................	<	5

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061446	Soil, #B-4, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Compound		Result
Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride	<	50
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane		100
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061446	Soil, #B-4, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Method 3040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061446	Soil, #B-4, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number

7061447

Sample Description

Soil, #B-5, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50

trans-1,2-Dichloroethene	<	[illegible]
1,2-Dichloropropane	<	[illegible]
1,3-Dichloropropene	<	[illegible]
Ethylbenzene		
Methylene chloride	<	[illegible]
1,1,2,2-Tetrachloroethane	<	[illegible]
Tetrachloroethene	<	[illegible]
1,1,1-Trichloroethane	<	[illegible]
1,1,2-Trichloroethane	<	[illegible]
Trichloroethene	<	[illegible]
Toluene		
Vinyl chloride	<	[illegible]
1,2-Dichlorobenzene	<	[illegible]
1,3-Dichlorobenzene	<	[illegible]
1,4-Dichlorobenzene	<	[illegible]

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Arthur G. Burton
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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061448	Soil, #B-5, R-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride		770
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane	<	50
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

SEQUOIA ANALYTICAL LABORATORY

NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061448	Soil, #B-5, R-3

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061448	Soil, #B-5, R-3

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061464	Soil, #B-5, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	< 10,000
Acrylonitrile	< 10,000
Benzene	< 50
Bromomethane	< 50
Bromodichloromethane	< 50
Bromoform	< 50
Carbon tetrachloride	< 50
Chlorobenzene	< 50
Chloroethane	< 50
2-Chloroethylvinyl ether	< 50
Chloroform	< 50
Chloromethane	< 50
Dibromochloromethane	< 50
1,1-Dichloroethane	< 50
1,2-Dichloroethane	< 50
1,1-Dichloroethene	< 50
trans-1,2-Dichloroethene	< 50
1,2-Dichloropropane	< 50
1,3-Dichloropropene	< 50
Ethylbenzene	< 50
Methylene chloride	< 50
1,1,2,2-Tetrachloroethane	< 50
Tetrachloroethene	< 50
1,1,1-Trichloroethane	< 50
1,1,2-Trichloroethane	< 50
Trichloroethene	< 50
Toluene	< 50
Vinyl chloride	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Method 8240 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number

7061464

Sample Description

Soil, B-5, R-4

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 8040 of the EPA was used for this analysis.

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Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061464	Soil, #B-5, R-4

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/[illegible] 87
Date Received: 06/[illegible] 87
Date Extracted: 06/[illegible] 87
Date Reported: 06/[illegible] 87
Project No. JCO-104[illegible]

Sample Number
7061449

Sample Description
Soil, #B-5, R-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	5
1,2-Dichloropropane	<	5
1,3-Dichloropropene	<	5
Ethylbenzene		-
Methylene chloride	<	5
1,1,2,2-Tetrachloroethane	<	5
Tetrachloroethene	<	5
1,1,1-Trichloroethane	<	5
1,1,2-Trichloroethane	<	5
Trichloroethene	<	5
Toluene		-
Vinyl chloride	<	5
1,2-Dichlorobenzene	<	5
1,3-Dichlorobenzene	<	5
1,4-Dichlorobenzene	<	5

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number

7061450

Sample Description

Soil, #B-5, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein........................		-
Acrylonitrile...................		-
Benzene.........................		-
Bromomethane....................	<	50
Bromodichloromethane............	<	50
Bromoform.......................	<	50
Carbon tetrachloride............	<	50
Chlorobenzene...................		-
Chloroethane....................	<	50
2-Chloroethylvinyl ether........	<	50
Chloroform......................	<	50
Chloromethane...................	<	50
Dibromochloromethane............	<	50
1,1-Dichloroethane..............	<	50
1,2-Dichloroethane..............	<	50
1,1-Dichloroethene..............	<	50

trans-1,2-Dichloroethene..............	<	[illegible]
1,2-Dichloropropane...................	<	[illegible]
1,3-Dichloropropene...................	<	[illegible]
Ethylbenzene..........................		[illegible]
Methylene chloride....................	<	[illegible]
1,1,2,2-Tetrachloroethane.............	<	[illegible]
Tetrachloroethene.....................	<	[illegible]
1,1,1-Trichloroethane.................	<	[illegible]
1,1,2-Trichloroethane.................	<	[illegible]
Trichloroethene.......................	<	[illegible]
Toluene...............................		[illegible]
Vinyl chloride........................	<	[illegible]
1,2-Dichlorobenzene...................	<	[illegible]
1,3-Dichlorobenzene...................	<	[illegible]
1,4-Dichlorobenzene...................	<	[illegible]

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061450	Soil, #B-5, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061450

Sample Description: Soil, #B-5, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061451	Soil, #B-6, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	50
Acrylonitrile		-	1,2-Dichloropropane	<	50
Benzene		-	1,3-Dichloropropene	<	50
Bromomethane	<	50	Ethylbenzene		-
Bromodichloromethane	<	50	Methylene chloride		2,10[illegible]
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	50
Carbon tetrachloride	<	50	Tetrachloroethene	<	50
Chlorobenzene		-	1,1,1-Trichloroethane	<	50
Chloroethane	<	50	1,1,2-Trichloroethane	<	50
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	50
Chloroform	<	50	Toluene		-
Chloromethane	<	50	Vinyl chloride	<	50
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	50
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	50
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	50
1,1-Dichloroethene	<	50			

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061452

Sample Description: Soil, #B-6, R-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	5
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	5
Ethylbenzene		-
Methylene chloride		990
1,1,2,2-Tetrachloroethane	<	5
Tetrachloroethene	<	5
1,1,1-Trichloroethane	<	50
1,1,2-Trichloroethane	<	5
Trichloroethene	<	5
Toluene		-
Vinyl chloride	<	5
1,2-Dichlorobenzene	<	5
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	5

990

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061452	Soil, B-6, R-3

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS

results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061452	Soil, #B-6, R-3

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061465

Sample Description: Soil, #B-6, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	< 10,000	trans-1,2-Dichloroethene	< 50
Acrylonitrile	< 10,000	1,2-Dichloropropane	< 50
Benzene	< 50	1,3-Dichloropropene	< 50
Bromomethane	< 50	Ethylbenzene	< 50
Bromodichloromethane	< 50	Methylene chloride	< 50
Bromoform	< 50	1,1,2,2-Tetrachloroethane	< 50
Carbon tetrachloride	< 50	Tetrachloroethene	< 50
Chlorobenzene	< 50	1,1,1-Trichloroethane	< 50
Chloroethane	< 50	1,1,2-Trichloroethane	< 50
2-Chloroethylvinyl ether	< 50	Trichloroethene	< 50
Chloroform	< 50	Toluene	< 50
Chloromethane	< 50	Vinyl chloride	< 50
Dibromochloromethane	< 50	1,2-Dichlorobenzene	< 50
1,1-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,4-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50		

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8240 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061465	Soil, #B-6, R-4

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061465

Sample Description: Soil, #B-6, R-4

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061453	Soil, #B-6, R-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Compound	Result
Acrolein	-
Acrylonitrile	-
Benzene	-
Bromomethane	< 50
Bromodichloromethane	< 50
Bromoform	< 50
Carbon tetrachloride	< 50
Chlorobenzene	-
Chloroethane	< 50
2-Chloroethylvinyl ether	< 50
Chloroform	< 50
Chloromethane	< 50
Dibromochloromethane	< 50
1,1-Dichloroethane	< 50
1,2-Dichloroethane	< 50
1,1-Dichloroethene	< 50
trans-1,2-Dichloroethene	< 5[illegible]
1,2-Dichloropropane	< 50
1,3-Dichloropropene	< 5[illegible]
Ethylbenzene	
Methylene chloride	720
1,1,2,2-Tetrachloroethane	< 5[illegible]
Tetrachloroethene	< 5[illegible]
1,1,1-Trichloroethane	< 50
1,1,2-Trichloroethane	< 5[illegible]
Trichloroethene	< 5[illegible]
Toluene	-
Vinyl chloride	< 5[illegible]
1,2-Dichlorobenzene	< 5[illegible]
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 5[illegible]

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061454	Soil, #B-6, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	5
Acrylonitrile		-	1,2-Dichloropropane	<	5
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		-
Bromodichloromethane	<	50	Methylene chloride		1,60
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	5
Chlorobenzene		-	1,1,1-Trichloroethane	<	5
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	5
Chloroform	<	50	Toluene		-
Chloromethane	<	50	Vinyl chloride	<	5
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	5
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	5
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	50
1,1-Dichloroethene	<	50			

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061454	Soil, B-6, R-5

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061454	Soil, #B-6, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Sample Number	Sample Description
7061455	Soil, #B-7, R-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	5
Acrylonitrile		-	1,2-Dichloropropane	<	50
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		-
Bromodichloromethane	<	50	Methylene chloride		250
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	5
Chlorobenzene		-	1,1,1-Trichloroethane		56
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	5
Chloroform	<	50	Toluene		-
Chloromethane	<	50	Vinyl chloride	<	5
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	5
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	50
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	5
1,1-Dichloroethene	<	50			

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061456	Soil, #B-7, R-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	50
Bromodichloromethane	<	50
Bromoform	<	50
Carbon tetrachloride	<	50
Chlorobenzene		-
Chloroethane	<	50
2-Chloroethylvinyl ether	<	50
Chloroform	<	50
Chloromethane	<	50
Dibromochloromethane	<	50
1,1-Dichloroethane	<	50
1,2-Dichloroethane	<	50
1,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride	<	50
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane	<	50
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

ample Number	Sample Description
7061466	Soil, #B-7, R-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

crolein	< 10,000	trans-1,2-Dichloroethene	< 5
crylonitrile	< 10,000	1,2-Dichloropropane	< 50
enzene	< 50	1,3-Dichloropropene	< 5
romomethane	< 50	Ethylbenzene	< 5
romodichloromethane	< 50	Methylene chloride	< 50
romoform	< 50	1,1,2,2-Tetrachloroethane	< 5
arbon tetrachloride	< 50	Tetrachloroethene	< 5
hlorobenzene	< 50	1,1,1-Trichloroethane	< 50
hloroethane	< 50	1,1,2-Trichloroethane	< 5
-Chloroethylvinyl ether	< 50	Trichloroethene	< 5
hloroform	< 50	Toluene	< 50
hloromethane	< 50	Vinyl chloride	< 50
ibromochloromethane	< 50	1,2-Dichlorobenzene	< 5
,1-Dichloroethane	< 50	1,3-Dichlorobenzene	< 50
,2-Dichloroethane	< 50	1,4-Dichlorobenzene	< 50
,1-Dichloroethene	< 50		

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NOTE: Method 8240 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061466	Soil, #B-7, R-3

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104B

Sample Number: 7061466

Sample Description: Soil, #B-7, R-3

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061457	Soil, #B-7, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	5
Acrylonitrile		-	1,2-Dichloropropane	<	5
Benzene		-	1,3-Dichloropropene	<	5
Bromomethane	<	50	Ethylbenzene		
Bromodichloromethane	<	50	Methylene chloride	<	5
Bromoform	<	50	1,1,2,2-Tetrachloroethane	<	5
Carbon tetrachloride	<	50	Tetrachloroethene	<	5
Chlorobenzene		-	1,1,1-Trichloroethane	<	5
Chloroethane	<	50	1,1,2-Trichloroethane	<	5
2-Chloroethylvinyl ether	<	50	Trichloroethene	<	5
Chloroform	<	50	Toluene		
Chloromethane	<	50	Vinyl chloride	<	5
Dibromochloromethane	<	50	1,2-Dichlorobenzene	<	5
1,1-Dichloroethane	<	50	1,3-Dichlorobenzene	<	5
1,2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	5
1,1-Dichloroethene	<	50			

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061457	Soil, #B-7, R-4

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061457	Soil, #B-7, R-4

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: [illegible]
Date Received: [illegible]
Date Extracted: [illegible]
Date Reported: [illegible]
Project No. JCO-1[illegible]

Sample Number

7061458

Sample Description

Soil, #B-7, R-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein..........................		-	trans-1,2-Dichloroethene..............	<
Acrylonitrile.....................		-	1,2-Dichloropropane...................	<
Benzene...........................		-	1,3-Dichloropropene...................	<
Bromomethane......................	<	50	Ethylbenzene..........................	
Bromodichloromethane..............	<	50	Methylene chloride....................	<
Bromoform.........................	<	50	1,1,2,2-Tetrachloroethane.............	<
Carbon tetrachloride..............	<	50	Tetrachloroethene.....................	<
Chlorobenzene.....................		-	1,1,1-Trichloroethane.................	<
Chloroethane......................	<	50	1,1,2-Trichloroethane.................	<
2-Chloroethylvinyl ether..........	<	50	Trichloroethene.......................	<
Chloroform........................	<	50	Toluene...............................	
Chloromethane.....................	<	50	Vinyl chloride........................	<
Dibromochloromethane..............	<	50	1,2-Dichlorobenzene...................	<
1,1-Dichloroethane................	<	50	1,3-Dichlorobenzene...................	<
1,2-Dichloroethane................	<	50	1,4-Dichlorobenzene...................	<
1,1-Dichloroethene................	<	50		

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Reported: 06/26/87
Project No. JCO-104H

ımple Number

7061459

Sample Description

Soil, #B-7, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

:rolein		-
:rylonitrile		-
ənzene		-
:omomethane	<	50
romodichloromethane	<	50
romoform	<	50
ırbon tetrachloride	<	50
hlorobenzene		-
hloroethane	<	50
-Chloroethylvinyl ether	<	50
hloroform	<	50
hloromethane	<	50
ibromochloromethane	<	50
,1-Dichloroethane	<	50
,2-Dichloroethane	<	50
,1-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride	<	50
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene	<	50
1,1,1-Trichloroethane	<	50
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061459	Soil, #B-7, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Project No. JCO-104H

Sample Number	Sample Description
7061459	Soil, #B-7, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	< 1.0
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
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Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061467	Soil, #B-8, R-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppm

Acrolein	< 10
Acrylonitrile	< 10
Benzene	< 2
Bromomethane	< 2
Bromodichloromethane	< 2
Bromoform	< 2
Carbon tetrachloride	680
Chlorobenzene	< 2
Chloroethane	< 2
2-Chloroethylvinyl ether	< 2
Chloroform	2.3
Chloromethane	< 2
Dibromochloromethane	< 2
1,1-Dichloroethane	27
1,2-Dichloroethane	3.9
1,1-Dichloroethene	13

trans-1,2-Dichloroethene	
1,2-Dichloropropane	<
1,3-Dichloropropene	<
Ethylbenzene	1
Methylene chloride	3,40
1,1,2,2-Tetrachloroethane	<
Tetrachloroethene	
1,1,1-Trichloroethane	<
1,1,2-Trichloroethane	<
Trichloroethene	4
Toluene	1,70
Vinyl chloride	<
1,2-Dichlorobenzene	<
1,3-Dichlorobenzene	<
1,4-Dichlorobenzene	<

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NOTE: Method 8240 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061467	Soil, #B-8, R-2

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061467	Soil, #B-8, R-2

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	270
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	3.5

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Date Sampled: 06/10/87
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Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

mple Number	Sample Description
7061460	Soil, #B-8, R-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppm

olein		-
ylonitrile		-
zene		-
momethane	<	50
modichloromethane	<	50
moform	<	50
bon tetrachloride	<	50
orobenzene		-
oroethane	<	50
hloroethylvinyl ether	<	50
oroform	<	50
oromethane	<	50
romochloromethane	<	50
-Dichloroethane		34
-Dichloroethane	<	50
-Dichloroethene	<	50
trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	50
1,3-Dichloropropene	<	50
Ethylbenzene		-
Methylene chloride		2,400
1,1,2,2-Tetrachloroethane	<	50
Tetrachloroethene		6.
1,1,1-Trichloroethane		1,500
1,1,2-Trichloroethane	<	50
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	50
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	50
1,4-Dichlorobenzene	<	50

NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number: 7061461

Sample Description: Soil, #B-8, R-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

crolein	-
crylonitrile	-
enzene	-
romomethane	< 250
romodichloromethane	< 250
romoform	< 250
arbon tetrachloride	< 250
hlorobenzene	-
hloroethane	< 250
-Chloroethylvinyl ether	< 250
hloroform	< 250
hloromethane	< 250
ibromochloromethane	< 250
,1-Dichloroethane	980
,2-Dichloroethane	< 250
,1-Dichloroethene	< 250
trans-1,2-Dichloroethene	< [illegible]
1,2-Dichloropropane	< 2[illegible]
1,3-Dichloropropene	< [illegible]
Ethylbenzene	[illegible]
Methylene chloride	71,0[illegible]
1,1,2,2-Tetrachloroethane	< [illegible]
Tetrachloroethene	[illegible]
1,1,1-Trichloroethane	22,[illegible]
1,1,2-Trichloroethane	< [illegible]
Trichloroethene	[illegible]
Toluene	[illegible]
Vinyl chloride	< [illegible]
1,2-Dichlorobenzene	< 2[illegible]
1,3-Dichlorobenzene	< 2[illegible]
1,4-Dichlorobenzene	< [illegible]

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061461	Soil, #B-8, R-4

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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NOTE: Method 8040 of the EPA was used for this analysis.

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Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061461	Soil, #B-8, R-4

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	15
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	< 1.0

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/23/87
Date Reported: 06/26/87
Project No. JCO-104H

ample Number
7061462

Sample Description
Soil, #B-8, R-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

crolein		-	trans-1,2-Dichloroethene	<	50
crylonitrile		-	1,2-Dichloropropane	<	50
enzene		-	1,3-Dichloropropene	<	50
romomethane	<	50	Ethylbenzene		-
romodichloromethane	<	50	Methylene chloride		8,900
romoform	<	50	1,1,2,2-Tetrachloroethane	<	50
arbon tetrachloride	<	50	Tetrachloroethene	<	50
lorobenzene		-	1,1,1-Trichloroethane		2,300
loroethane	<	50	1,1,2-Trichloroethane	<	50
-Chloroethylvinyl ether	<	50	Trichloroethene		88
loroform	<	50	Toluene		-
loromethane	<	50	Vinyl chloride	<	50
bromochloromethane	<	50	1,2-Dichlorobenzene	<	50
1-Dichloroethane		200	1,3-Dichlorobenzene	<	50
2-Dichloroethane	<	50	1,4-Dichlorobenzene	<	50
1-Dichloroethene	<	50			

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NOTE: Method 8010 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
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Date Extracted: 06/23/87
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Project No. JCO-104H

ample Number	Sample Description
7061463	Soil, #B-8, R-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

crolein		-
crylonitrile		-
enzene		-
romomethane	<	50
romodichloromethane	<	50
romoform	<	50
rbon tetrachloride	<	50
hlorobenzene		-
hloroethane	<	50
-Chloroethylvinyl ether	<	50
hloroform	<	50
hloromethane	<	50
ibromochloromethane	<	50
,1-Dichloroethane		760
,2-Dichloroethane	<	50
,1-Dichloroethene	<	50

trans-1,2-Dichloroethene	<	50
1,2-Dichloropropane	<	5[illegible]
1,3-Dichloropropene	<	5[illegible]
Ethylbenzene		-
Methylene chloride		18,00[illegible]
1,1,2,2-Tetrachloroethane	<	5[illegible]
Tetrachloroethene	<	50
1,1,1-Trichloroethane		21[illegible]
1,1,2-Trichloroethane	<	5[illegible]
Trichloroethene	<	50
Toluene		-
Vinyl chloride	<	5[illegible]
1,2-Dichlorobenzene	<	50
1,3-Dichlorobenzene	<	5[illegible]
1,4-Dichlorobenzene	<	5[illegible]

NOTE: Method 8010 of the EPA was used for this analysis.

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Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 06/10/87
Date Received: 06/10/87
Date Extracted: 06/19/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061463	Soil, #B-8, R-6

PRIORITY POLLUTANTS

ACID EXTRACT ORGANICS
results in ppb

4-Chloro-3-methylphenol	< 100
2-Chlorophenol	< 100
2,4-Dichlorophenol	< 100
2,4-Dimethylphenol	< 100
2,4-Dinitrophenol	< 100
2-Methyl-4,6-dinitrophenol	< 100
2-Nitrophenol	< 100
4-Nitrophenol	< 100
Pentachlorophenol	< 100
Phenol	< 100
2,4,6-Trichlorophenol	< 100

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Laboratory Director

NOTE: Method 8040 of the EPA was used for this analysis.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description
7061463	Soil, #B-8, R-6

ANALYSIS

	Detection Limit ppm	Sample Results ppm
Acetone	1.0	13
Methanol	1.0	< 1.0
Ethanol	1.0	< 1.0
Isopropyl Alcohol	1.0	2.5

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description Soil	Detection Limit ppm	Total Hydrocarbons as Paint Thinner ppm
7061435	B-2, R-1	1.0	< 1.0
7061438	B-2, R-6	1.0	< 1.0
7061439	B-3, R-1	1.0	< 1.0
7061441	B-3, R-6	1.0	< 1.0
7061442	B-4, R-1	1.0	< 1.0
7061446	B-4, R-6	1.0	< 1.0
7061448	B-5, R-3	1.0	< 1.0
7061450	B-5, R-6	1.0	< 1.0
7061452	B-6, R-3	1.0	< 1.0
7061454	B-6, R-6	1.0	< 1.0
7061457	B-7, R-4	1.0	< 1.0
7061461	B-8, R-4	1.0	2,600
7061463	B-8, R-6	1.0	20
7061464	B-5, R-4	1.0	< 1.0
7061465	B-6, R-4	1.0	< 1.0
7061466	B-7, R-3	1.0	< 1.0
7061467	B-8, R-2	1.0	11,000
7061459	B-7, R-6	1.0	< 1.0

NOTE: Analysis was performed using EPA methods 3550 and 8015.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description Soil	Detection Limit ppm	Total Hydrocarbons as Laquer Thinner ppm
7061435	B-2, R-1	1.0	< 1.0
7061438	B-2, R-6	1.0	< 1.0
7061439	B-3, R-1	1.0	< 1.0
7061441	B-3, R-6	1.0	< 1.0
7061442	B-4, R-1	1.0	< 1.0
7061446	B-4, R-6	1.0	< 1.0
7061448	B-5, R-3	1.0	< 1.0
7061450	B-5, R-6	1.0	< 1.0
7061452	B-6, R-3	1.0	< 1.0
7061454	B-6, R-6	1.0	< 1.0
7061457	B-7, R-4	1.0	< 1.0
7061461	B-8, R-4	1.0	< 1.0
7061463	B-8, R-6	1.0	< 1.0
7061464	B-5, R-4	1.0	< 1.0
7061465	B-6, R-4	1.0	< 1.0
7061466	B-7, R-3	1.0	< 1.0
7061467	B-8, R-2	1.0	< 1.0
7061459	B-8, R-6	1.0	< 1.0

NOTE: Analysis was performed using EPA methods 3550 and 8015.

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Date Sampled: 06/10/87
Date Received: 06/10/87
Date Reported: 06/26/87
Project No. JCO-104H

Sample Number	Sample Description Soil	Detection Limit ppm	Total Hydrocarbons as Kerosene ppm
7061435	B-2, R-1	1.0	< 1.0
7061438	B-2, R-6	1.0	< 1.0
7061439	B-3, R-1	1.0	< 1.0
7061441	B-3, R-6	1.0	< 1.0
7061442	B-4, R-1	1.0	< 1.0
7061446	B-4, R-6	1.0	< 1.0
7061448	B-5, R-3	1.0	< 1.0
7061450	B-5, R-6	1.0	< 1.0
7061452	B-6, R-3	1.0	< 1.0
7061453	B-6, R-6	1.0	< 1.0
7061457	B-7, R-4	1.0	< 1.0
7061461	B-8, R-4	1.0	< 1.0
7061463	B-8, R-6	1.0	< 1.0
7061464	B-5, R-4	1.0	< 1.0
7061465	B-6, R-4	1.0	< 1.0
7061466	B-7, R-3	1.0	< 1.0
7061467	B-8, R-2	1.0	< 1.0
7061459	B-7, R-6	1.0	< 1.0

NOTE: Analysis was performed using EPA methods 3550 and 8015.

SEQUOIA ANALYTICAL LABORATORY

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V 10
Soil Sample
analyses

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Attn: Bob Breynaert

Date Sampled: 03/04/88
Date Received: 03/08/88
Date Reported: 03/15/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description Soil,	depth	Detection Limit ppm	High Boiling Point Hydrocarbons ppm
8030558	R-3	[illegible]	1	< 1.0
8030559	R-4	[illegible]	1	< 1.0
8030560	R-6	16-16.5	1	< 1.0
8030561	R-7	21-21.5	1	< 1.0
8030562	R-8	26-26.5	1	< 1.0
8030563	R-9	31-31.5	1	< 1.0

Method of Analysis: EPA 3550/8015

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030558	Soil, R-3

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030559	Soil, R-4

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030560	Soil, R-6

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030561	Soil, R-7

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030562	Soil, R-8

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030563	Soil, R-9

PRIORITY POLLUTANTS

PURGEABLE AROMATICS
results in ppb

Benzene	< 50
Chlorobenzene	< 50
Ethylbenzene	< 50
Toluene	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

Method of Analysis: EPA 8020

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Palo Alto, CA 94303
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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Reported: 03/14/88

Q.C. DATA REPORT

Analyst: M. Giles
Date of Analysis: 3/11/88
Method of Analysis: 8020
Detection Limit: 50
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030561	Benzene	< 5.0	< 50	0.0

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030561	Benzene	< 50	100	107	107

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Date Sampled: 03/04/88
Date Received: 03/08/88
Date Reported: 03/14/88

Q.C. DATA REPORT

Analyst: E. Esilius
Date of Analysis: 3/10/88
Method of Analysis: Diesel
Detection Limit: 1.0
Units: ppm

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030559	TPH-Diesel	< 1.0	< 1.0	0.0

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030559	TPH-Diesel	< 1.0	12	8.3	69

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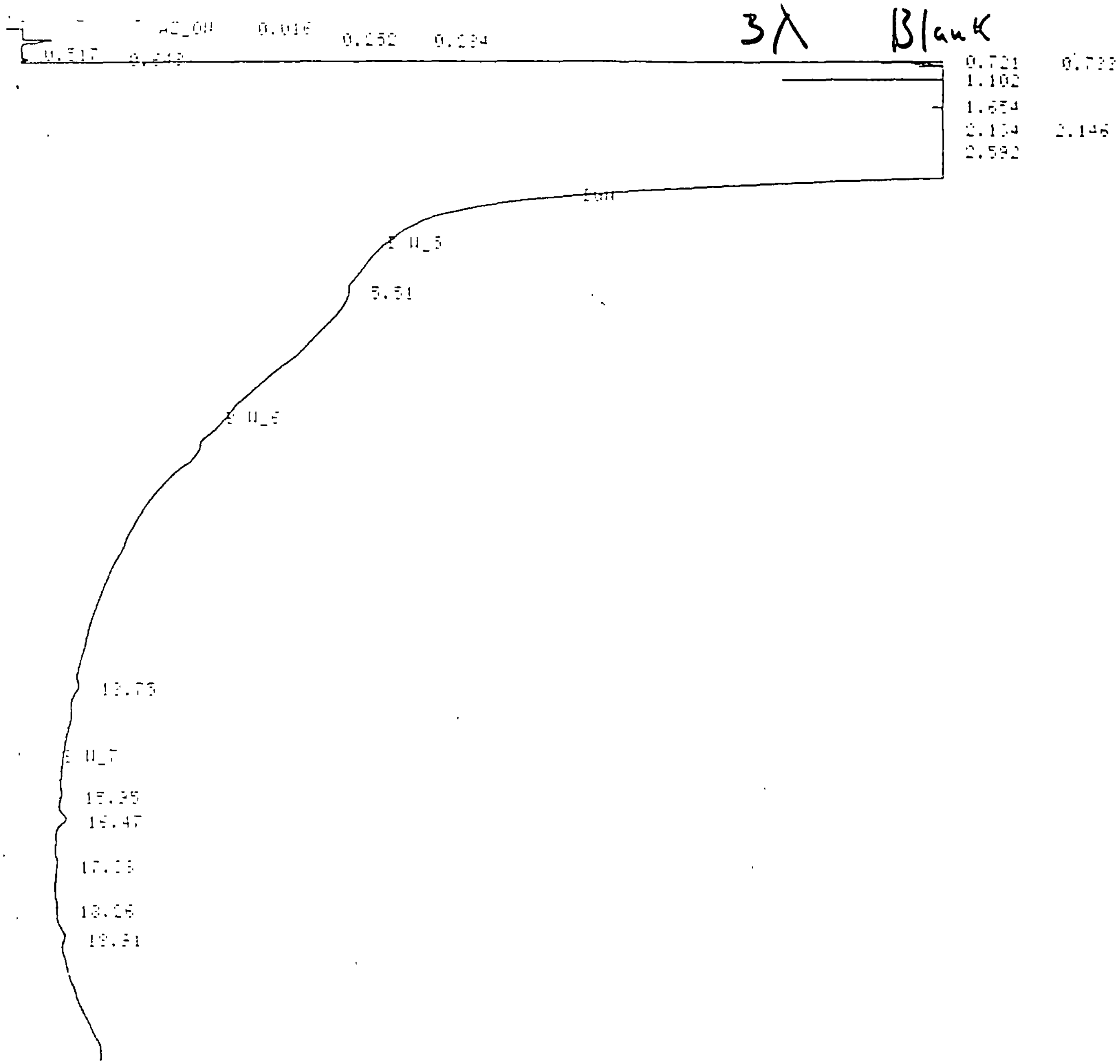
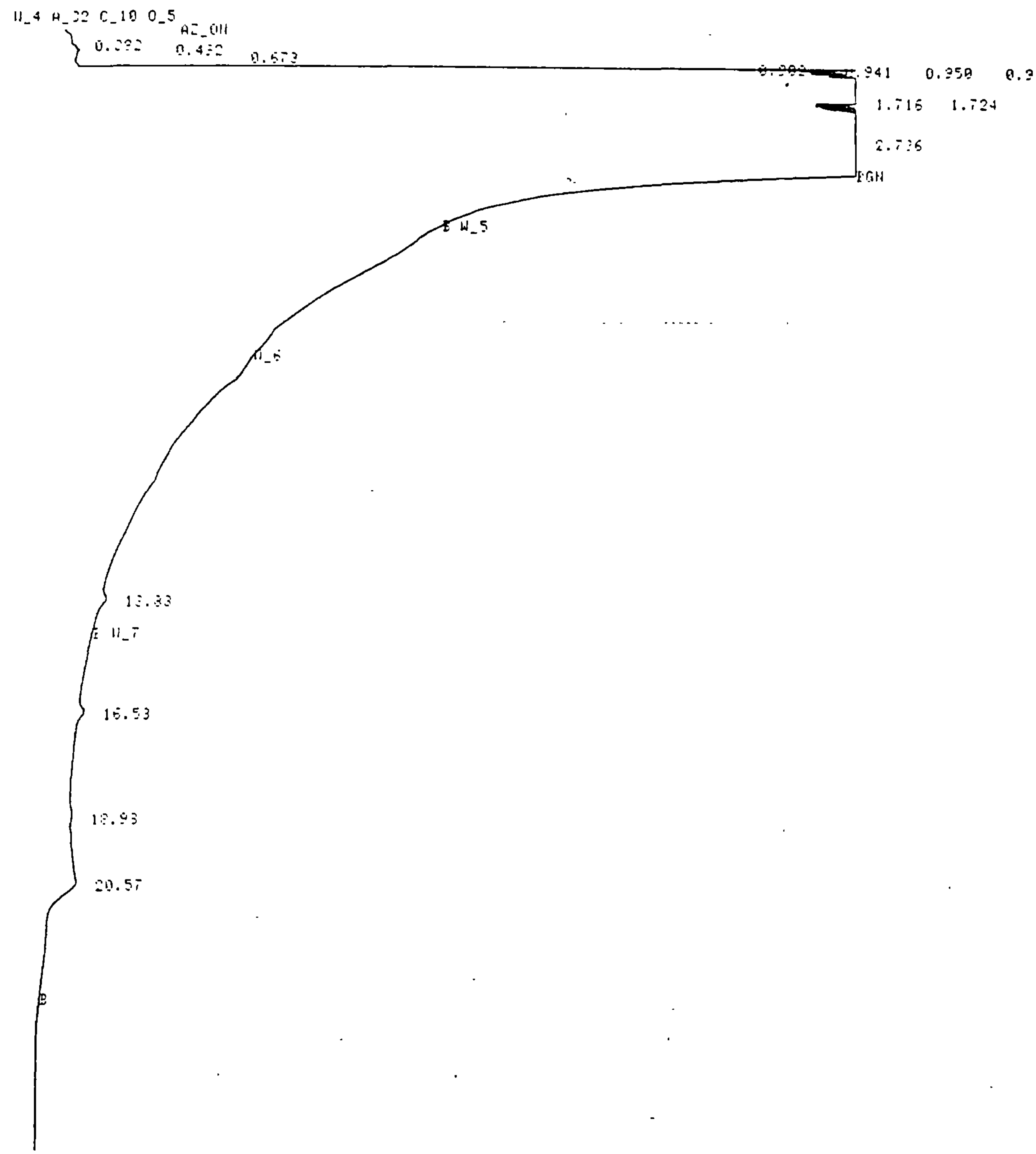


FILE 164 RUN 160 STARTED 02:55.3 80 01 09 HIGH BOILERS
% METHOD 1 DIESELS LAST EDITED 00:29.4 80 01/01

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
5.51	380122	1.7531		78.6458	19.0501
3.75	15182	1.1617		3.1411	12.6235
5.35	9201	0.6699	"	1.9036	7.2786
6.47	34274	2.7572	"	7.0911	29.9608
7.38	11675	0.7881	"	2.4155	8.5633
8.26	4794	0.3978	"	0.9918	4.3227
8.91	28087	1.6750	"	5.8111	18.2010

7 PEAKS AREA REJECT 483336 TOTAL AREA
7 PEAKS HEIGHT REJECT 9.2028 TOTAL HEIGHT

FILE 114   RUN 13   STARTED 23:24.1 80/01/06   24HR PUSHES 3A 8036558 (4:1)
% METHOD 1 HIGHBOIL   LAST EDITED 18:01.1 80/01/06

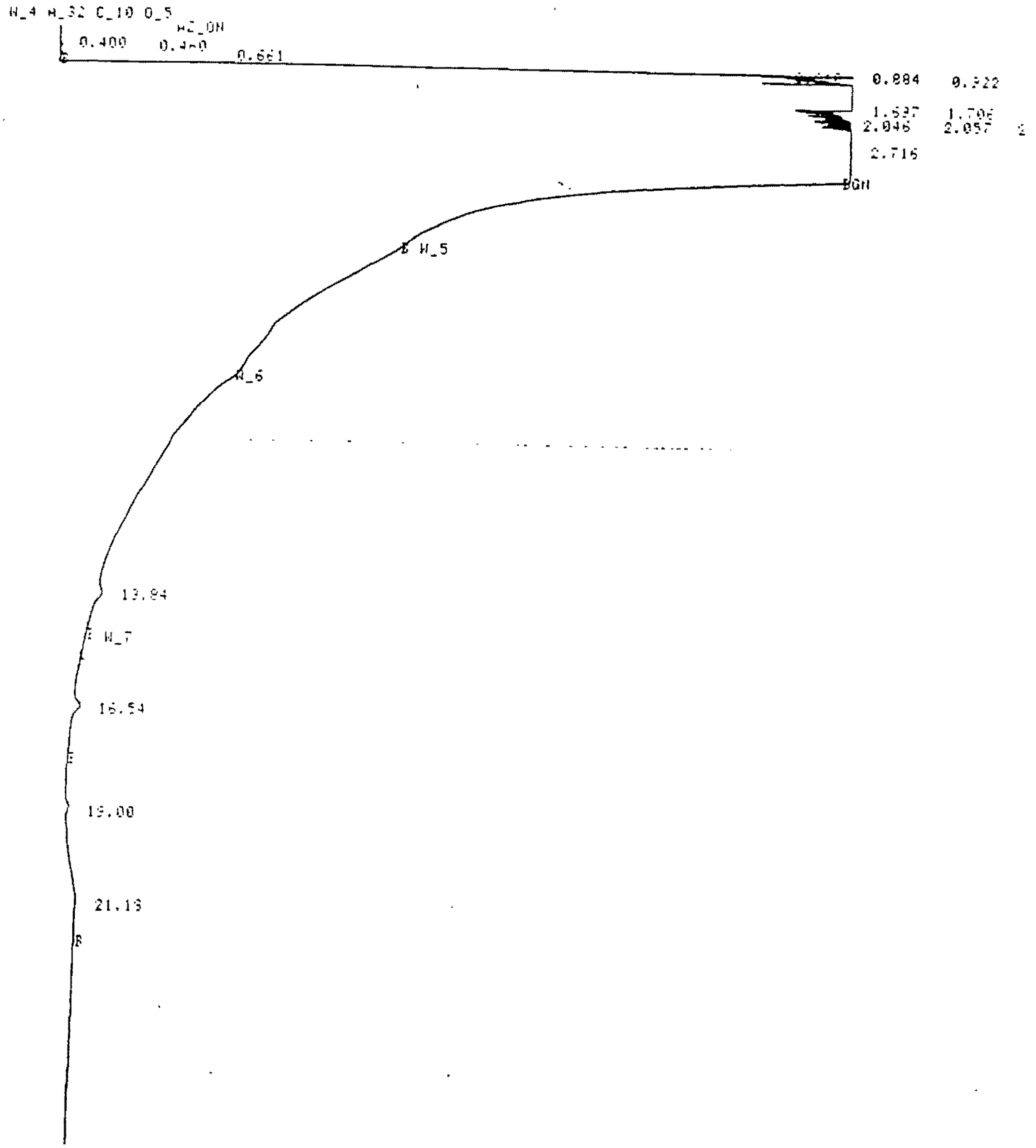


FILE 114   RUN 13   STARTED 23:24.1 80/01/06   24HR RUSHES
% METHOD 1 HIGHBOIL   LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.83	37389	2.2432		17.1096	19.3396
16.53	545	2.2362	V	0.2492	19.2796
18.98	12936	0.8794	V	5.9197	7.5820
20.57	167655	6.2401		76.7215	53.7988

4 PEAKS > AREA REJECT 218524 TOTAL AREA
4 PEAKS > HEIGHT REJECT 11.5989 TOTAL HEIGHT

FILE 115 RUN 14 STARTED 23:53.9 80/01/06 24HR RUSHES 31 8030559 (4:1)
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

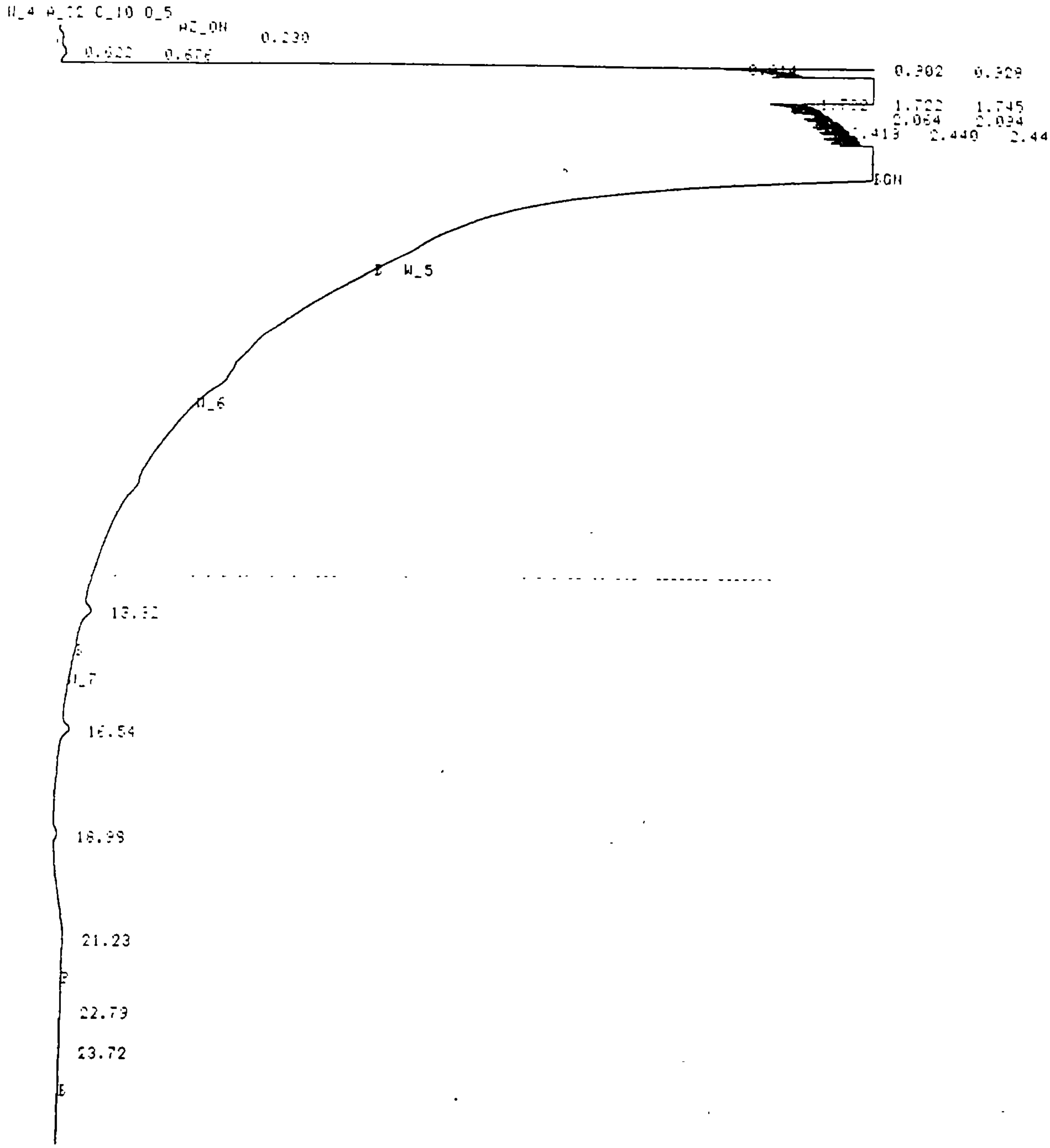


FILE 115 RUN 14 STARTED 23:53.9 80/01/06 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.84	32873	2.0917		16.4816	27.3839
16.54	36253	2.6662		18.1763	34.9045
19.00	16471	1.1360	V	8.2581	14.8725
21.18	113855	1.7446		57.0839	22.8391

4 PEAKS > AREA REJECT 199452 TOTAL AREA
4 PEAKS > HEIGHT REJECT 7.6385 TOTAL HEIGHT

FILE 116 RUN 15 STARTED 00:32.9 80/01/07 24HR RUSHES 3λ 8030560 (4:1)
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06



FILE 116 RUN 15 STARTED 00:32.9 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

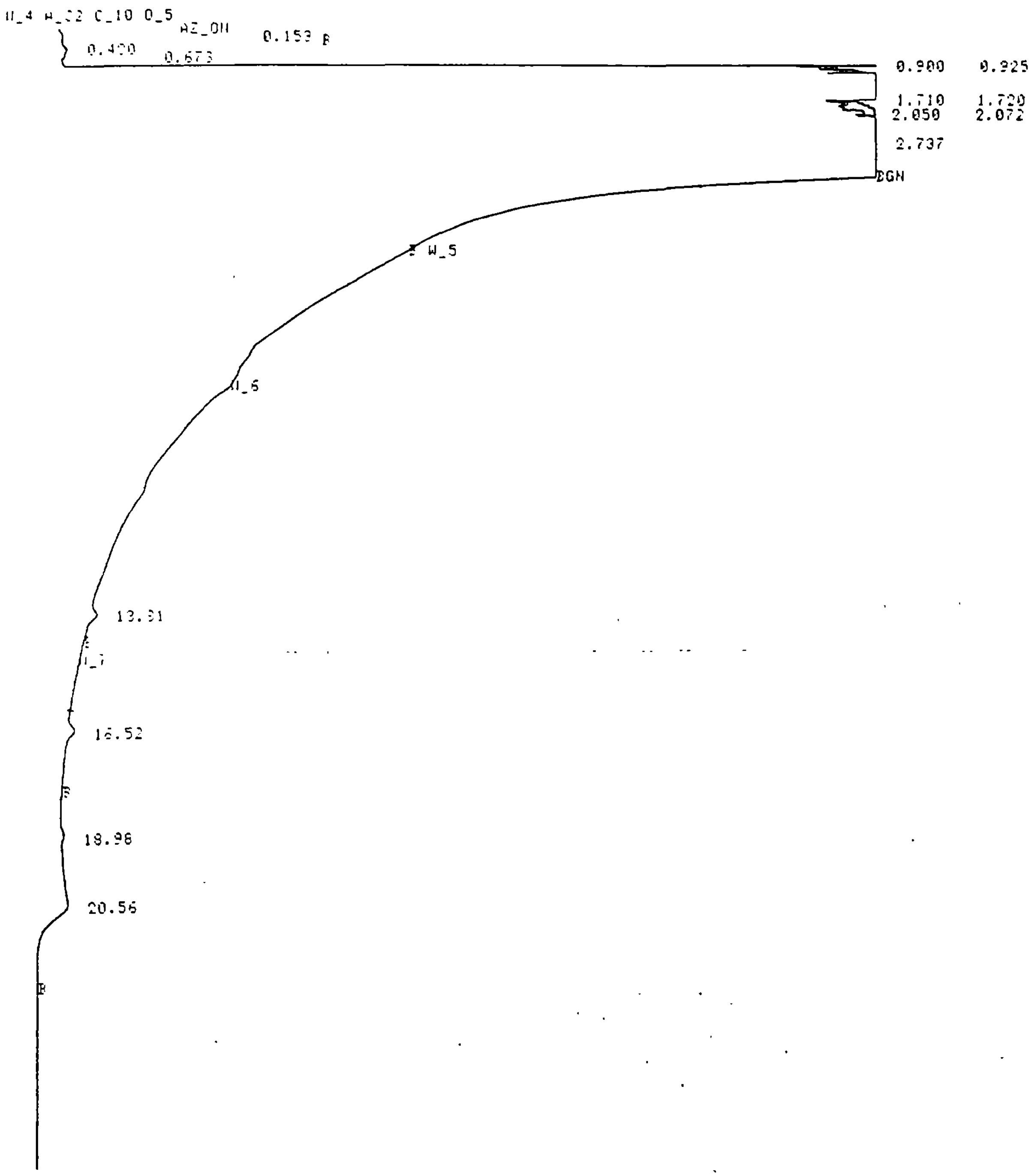
RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.82	44842	3.0125		21.3961	32.1940
16.54	4890	2.9325	V	2.3333	31.3394
18.98	21422	1.3875	V	10.2215	14.8282
21.23	129337	1.6539		61.7132	17.6745
22.79	3980	0.1457	V	1.8991	1.5569
23.72	5107	0.2252		2.4368	2.4071

6 PEAKS > AREA REJECT 209578 TOTAL AREA
6 PEAKS > HEIGHT REJECT 9.3572 TOTAL HEIGHT

KEYBOARD DIRECTED EVENTS

TIME	EVENT	VALUE
26.068	Stor Data	

FILE 117 RUN 16 STARTED 01:06.6 80/01/07 24HR RUSHES 3λ 8030561 (4:1)
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06



FILE 117 RUN 16 STARTED 01:06.6 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

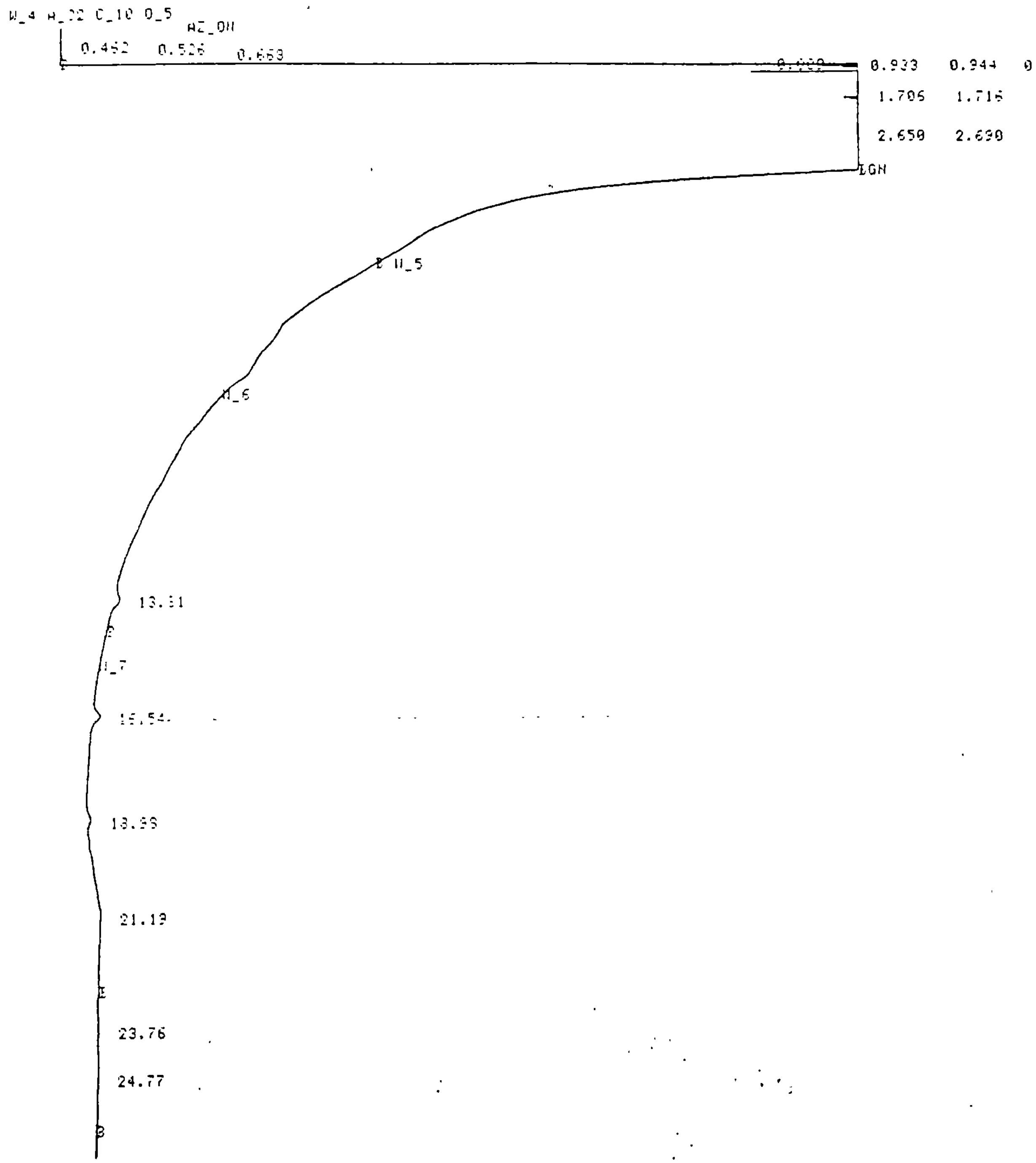
RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.81	43195	2.6941		14.6944	21.4638
16.52	32637	2.6625		11.1027	21.2122
18.98	16309	1.0738	V	5.5480	8.5553
20.56	201815	6.1213		68.6549	48.7687

4 PEAKS > AREA REJECT 293955 TOTAL AREA
4 PEAKS > HEIGHT REJECT 12.5517 TOTAL HEIGHT

KEYBOARD DIRECTED EVENTS

TIME	EVENT	VALUE

FILE 119 RUN 17 STARTED 01:36.8 80/01/07 24HR RUSHES 31 8030562 4:1
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06



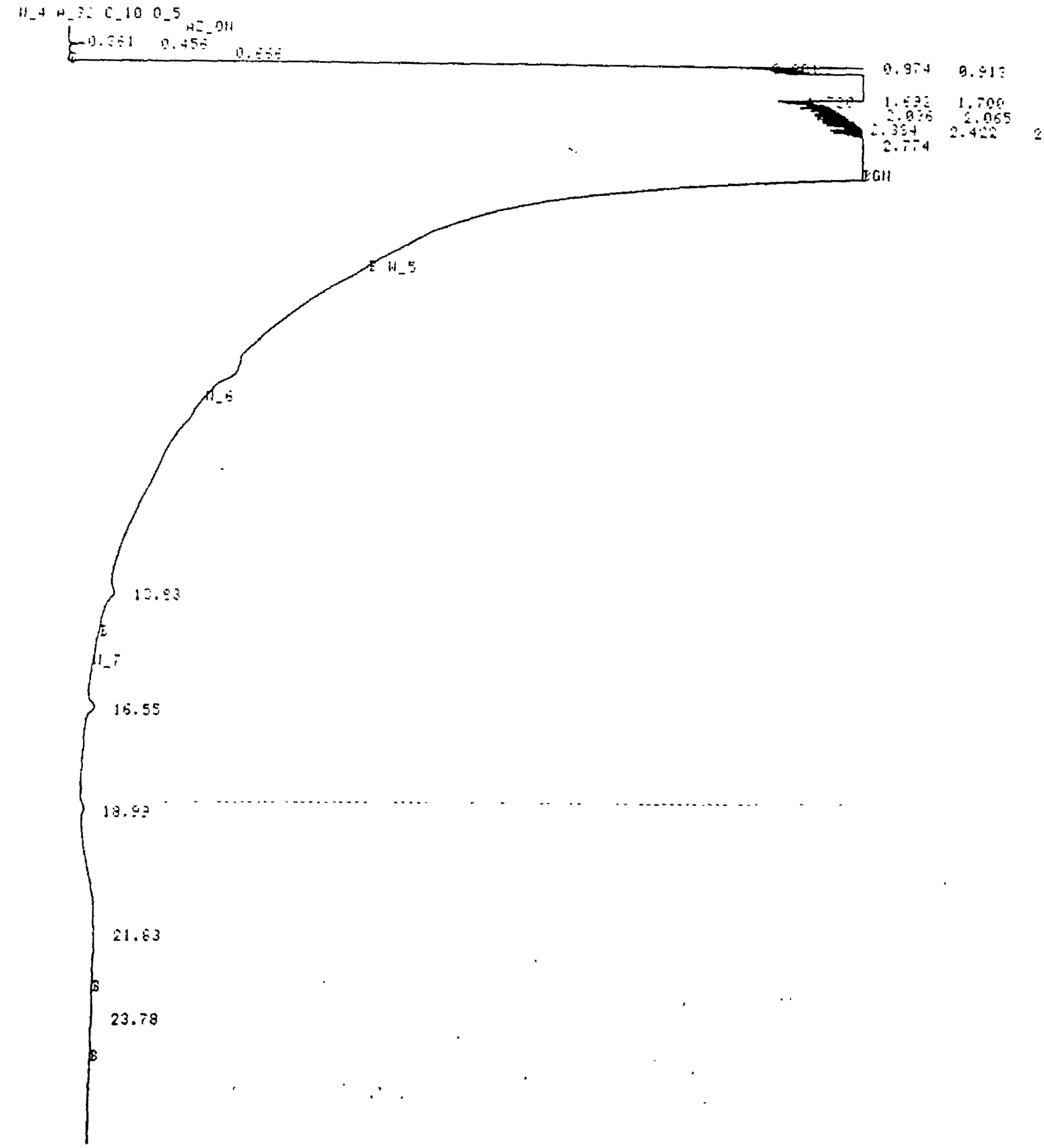
FILE 119 RUN 17 STARTED 01:36.8 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.81	31758	2.1206		8.5967	22.3288
16.54		2.7734	U		29.2021
18.98	19023	1.2849	U	5.1493	13.5286
21.19	303393	2.8764		82.2623	30.2854
23.76	5255	0.2066	U	1.4225	2.1750
24.77	9491	0.2354		2.5690	2.4791

5 PEAKS > AREA REJECT 369419 TOTAL AREA
6 PEAKS > HEIGHT REJECT 9.4973 TOTAL HEIGHT

3 λ 8030563 4:1

FILE 120 RUN 19 STARTED 02:57.2 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06



FILE 120 RUN 19 STARTED 02:57.2 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.83	35213	2.2598		9.5176	25.3265
16.55	8932	2.9252	U	2.3738	32.7841
18.99	19438	1.3005	U	5.1658	14.5756
21.83	305482	2.1812		81.1854	24.4458
23.78	6613	0.2559		1.7575	2.8679

5 PEAKS > AREA REJECT 376277 TOTAL AREA
5 PEAKS > HEIGHT REJECT 8.9225 TOTAL HEIGHT

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Sample Number: 80512114

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H
Sample Description: Soil, SB-1

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	N.D.	
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	540	168
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	1,300	113
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	1,100	219
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Wahler Associates
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Attn: Bob Breynaert

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052114	Soil, SB-1

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052115

Sample Description: Soil, SB-5

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	N.D.	
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052115	Soil, SB-5

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052116

Sample Description: Soil, SB-6

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	29,000	118
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	98	473
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	1,600	382
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	700	615, 649

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number
8052116

Sample Description
Soil, SB-6

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg	Scan#
1H-Indene, Octahydro-, Trans	370	467
Cyclohexane, Propyl	480	615

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052117

Sample Description: Soil, SB-8

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	1,200	120
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	600	195
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052117	Soil, SB-8

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052118

Sample Description: Soil, SB-9

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	35,000	126
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	1,300	197
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	610	169
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	1,200	477
2-Hexanone	500	N.D.	
Methylene chloride	500	6,200	114
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	240	355
Toluene	100	8,200	385
1,1,1-Trichloroethane	100	140	219
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	11,000	619

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052118	Soil, SB-9

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg	Scan#
Butanal	3,800	

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Wahler Associates
1023 Corporation Way
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Attn: Bob Breynaert

Sample Number: 8052119

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H
Sample Description: Soil, SB-10

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	1,000	86,000	119
Benzene	200	N.D.	
Bromodichloromethane	200	N.D.	
Bromoform	200	N.D.	
Bromomethane	200	N.D.	
2-Butanone	1,000	1,900	195
Carbon disulfide	200	N.D.	
Carbon tetrachloride	200	N.D.	
Chlorobenzene	200	N.D.	
Chlorodibromomethane	200	N.D.	
Chloroethane	200	N.D.	
2-Chloroethyl vinyl ether	1,000	N.D.	
Chloroform	1,000	N.D.	
Chloromethane	200	N.D.	
1,1-Dichloroethane	200	360	168
1,2-Dichloroethane	200	N.D.	
1,1-Dichloroethene	200	N.D.	
Total-1,2-Dichloroethene	200	N.D.	
1,2-Dichloropropane	200	N.D.	
cis-1,3-Dichloropropene	200	N.D.	
trans-1,3-Dichloropropene	200	N.D.	
Ethylbenzene	200	500	476
2-Hexanone	1,000	N.D.	
Methylene chloride	1,000	6,000	112
4-Methyl-2-pentanone	1,000	N.D.	
Styrene	200	N.D.	
1,1,2,2-Tetrachloroethane	200	N.D.	
Tetrachloroethene	200	N.D.	
Toluene	200	3,300	384
1,1,1-Trichloroethane	200	N.D.	
1,1,2-Trichloroethane	200	N.D.	
Trichloroethene	200	N.D.	
Trichlorofluoromethane	200	N.D.	
Vinyl acetate	200	N.D.	
Vinyl chloride	200	N.D.	
Total Xylenes	200	4,600	618, 653

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052119	Soil, SB-10

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 500 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052120

Sample Description: Soil, SB-11

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	N.D.	
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052120	Soil, SB-11

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052121

Sample Description: Soil, SB-12

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	9,200	121
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	1,800	194
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	320	474
2-Hexanone	500	N.D.	
Methylene chloride	500	680	112
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	1,600	382
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	2,800	615, 652

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Attn: Bob Breynaert

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052121	Soil, SB-12

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Laboratory Director

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Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052122

Sample Description: Soil, SB-13

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	750	120
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	200	475
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	1,200	384
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	1,900	617, 651

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052122	Soil, SB-13

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Sample Number: 8052123

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H
Sample Description: Soil, SB-14

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	N.D.	
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description
8052123	Soil, SB-14

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052124
Sample Description: Soil, SB-15

VOLATILE ORGANICS by MASS SPECTROMETRY

Analyte	Detection Limit, µg/kg	Sample Results, µg/kg	Scan#
Acetone	500	N.D.	
Benzene	100	N.D.	
Bromodichloromethane	100	N.D.	
Bromoform	100	N.D.	
Bromomethane	100	N.D.	
2-Butanone	500	N.D.	
Carbon disulfide	100	N.D.	
Carbon tetrachloride	100	N.D.	
Chlorobenzene	100	N.D.	
Chlorodibromomethane	100	N.D.	
Chloroethane	100	N.D.	
2-Chloroethyl vinyl ether	500	N.D.	
Chloroform	500	N.D.	
Chloromethane	100	N.D.	
1,1-Dichloroethane	100	N.D.	
1,2-Dichloroethane	100	N.D.	
1,1-Dichloroethene	100	N.D.	
Total-1,2-Dichloroethene	100	N.D.	
1,2-Dichloropropane	100	N.D.	
cis-1,3-Dichloropropene	100	N.D.	
trans-1,3-Dichloropropene	100	N.D.	
Ethylbenzene	100	N.D.	
2-Hexanone	500	N.D.	
Methylene chloride	500	N.D.	
4-Methyl-2-pentanone	500	N.D.	
Styrene	100	N.D.	
1,1,2,2-Tetrachloroethane	100	N.D.	
Tetrachloroethene	100	N.D.	
Toluene	100	N.D.	
1,1,1-Trichloroethane	100	N.D.	
1,1,2-Trichloroethane	100	N.D.	
Trichloroethene	100	N.D.	
Trichlorofluoromethane	100	N.D.	
Vinyl acetate	100	N.D.	
Vinyl chloride	100	N.D.	
Total Xylenes	100	N.D.	

Method of Analysis: EPA 5030/8240
Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

Sample Number: 8052124

Sample Description: Soil, SB-15

VOLATILE ORGANICS by MASS SPECTROMETRY
Non-Calibrated Compounds

Analyte	Concentration µg/kg

No additional peaks > 200 µg/kg were identified by the Mass Spectral library.

Method of Analysis: EPA 8240 & "Open Scan"

NOTE: All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library. Positive identification or specification between isomers cannot be made without retention time standards.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052114	Soil, SB-1

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052115	Soil, SB-5

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052116	Soil, SB-6

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052117	Soil, SB-8

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052118	Soil, SB-9

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052119	Soil, SB-10

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052120	Soil, SB-11

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052121	Soil, SB-12

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Extracted: 06/06/88
Date Analyzed:
Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052122	Soil, SB-13

Analyte	Detection Limit μg/kg	Sample Results μg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052123	Soil, SB-14

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

Analytes reported as N.D. were not present above the stated limit of detection.

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Date Analyzed: 06/07/88
Date Reported: 06/10/88
Project: #JCO-104H

PHENOLS

Sample Number	Sample Description
8052124	Soil, SB-15

Analyte	Detection Limit µg/kg	Sample Results µg/kg
4-Chloro-3-methylphenol	250	N.D.
2-Chlorophenol	250	N.D.
2,4-Dichlorophenol	250	N.D.
2,4-Dimethylphenol	250	N.D.
2,4-Dinitrophenol	8,700	N.D.
2-Methyl-4,6-dinitrophenol	11,000	N.D.
2-Nitrophenol	250	N.D.
4-Nitrophenol	2,000	N.D.
Pentachlorophenol	5,000	N.D.
Phenol	100	N.D.
2,4,6-Trichlorophenol	500	N.D.

Method of Analysis: EPA 8040

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Attn: Bob Breynaert

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/06/88
Date Reported: 06/10/88
Project: #JCO-104H

Sample Number	Sample Description Soil	Methanol mg/kg	Ethanol mg/kg	Acetone mg/kg	Isopropanol mg/kg
8052114	SB-1	3.3	0.7	1.3	N.D.
8052115	SB-5	1.3	N.D.	N.D.	N.D.
8052116	SB-6	1.5	N.D.	17	N.D.
8052117	SB-8	1.2	0.6	1.2	0.8
8052118	SB-9	5.8	3.4	49	164
8052119	SB-10	9.0	N.D.	100	21
8052120	SB-11	N.D.	N.D.	N.D.	N.D.
8052121	SB-12	2.4	N.D.	14	11
8052122	SB-13	1.1	N.D.	1.2	N.D.
8052123	SB-14	0.9	N.D.	N.D.	N.D.
8052124	SB-15	0.9	N.D.	N.D.	N.D.
Detection Limits:		0.5	0.5	0.5	0.5

Method of Analysis: EPA 3810/8015 Modified

Analytes reported as N.D. Were not present above the stated limit of detection.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222 • FAX (415) 364-9233

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 05/24/88
Date Received: 05/24/88
Date Analyzed: 06/10/88
Date Reported: 06/10/88
Project: #JCO-104H

High Boiling Point Hydrocarbons

Sample Number	Sample Description Soil	Lacquer Thinner mg/kg	Paint Thinner mg/kg	Kerosene mg/kg	Diesel mg/kg
8052114	SB-1	N.D.	N.D.	N.D.	N.D.
8052115	SB-5	N.D.	N.D.	N.D.	N.D.
8052116	SB-6	N.D.	170	N.D.	N.D.
8052117	SB-8	N.D.	N.D.	N.D.	N.D.
8052118	SB-9	N.D.	4.0	N.D.	8.1
8052119	SB-10	N.D.	7.3	N.D.	6.1
8052120	SB-11	N.D.	N.D.	N.D.	N.D.
8052121	SB-12	N.D.	2.1	N.D.	11
8052122	SB-13	N.D.	N.D.	N.D.	N.D.
8052123	SB-14	N.D.	N.D.	N.D.	N.D.
8052124	SB-15	N.D.	N.D.	N.D.	N.D.
Detection Limits:		1.0	1.0	1.0	1.0

Method of Analysis: EPA 3810/8015 Modified

Analytes reported as N.D. Were not present above the stated limit of detection.

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

APPENDIX F
LABORATORY REPORTS AND QA/QC OF SOIL ANALYSES CONDUCTED JUNE TO AUGUST 1990

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev 03/88

No. 54956

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Jasco Chemical Corp.	PROJECT LOCATION: MT. VIEW
PROJ NO: 7403	PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO: (716) 928-1819	
CLIENT'S REPRESENTATIVE: Dan Thomas	PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): LIA Method 8010; EPA Method 8020; Alcohols + Acetone EPA 8015; High Boiling Pt Hydrocarbons (8015); Low Boiling Pt Hydrocarbons (8015)

ITEM NO.	SAMPLE NUMBER	DATE (90)	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	LIA Method 8010	EPA Method 8020	Alcohols + Acetone EPA 8015	High Boiling Pt Hydrocarbons (8015)	Low Boiling Pt Hydrocarbons (8015)				REMARKS
1	7403-S1A	6-5	0909		X	Surface Soil - From 1 Foot square grid	1-liter glass Jar	✓	✓	✓	✓	✓				
2	7403-S1B	6-5	1035		X		1-6" Brass Tube	✓	✓	✓	✓	✓				
3	7403-S2A	6-5	1000		X		1-liter glass Jar	✓	✓	✓	✓	✓				
4	7403-S2B	6-5	1040		X		1-6" Brass Tube	✓	✓	✓	✓	✓				
5	7403-S3A	6-5	1015		X		1-liter glass Jar	✓	✓	✓	✓	✓				
6	7403-S3B	6-5	1100		X		1-6" Brass Tube	✓	✓	✓	✓	✓				
7	7403-S4A	6-5	1030		X		1-liter glass Jar	✓	✓	✓	✓	✓				
8	7403-S4B	6-5	1110		X		1-6" Brass Tube	✓	✓	✓	✓	✓				
9	7403-S5A	6-5	1038		X		1-liter glass Jar	✓	✓	✓	✓	✓				
10	7403-S5B	6-5	1130		X		1-6" Brass Tube	✓	✓	✓	✓	✓				

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1 ~~-10~~				
2					
3					
4	1-10	Scott Rice	[signature]	6/5/90	1640

REMARKS: Sequoia Analytical Redwood City

Normal

SAMPLER'S SIGNATURE: Scott Rice

A Subsidiary of Environmental Treatment and Technologies Corp
The Environmental Services Company

TRANSFER 3

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 54954

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Jasco Chemical Corp
PROJECT LOCATION: MT. VIEW
PROJ NO: 7403
PROJECT CONTACT: SCOTT RICE
PROJECT TELEPHONE NO: (916) 928 1819
CLIENT'S REPRESENTATIVE: Dan Thomas
PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): EPA 8010; EPA 8020; Acetone + Alcohols EPA 8015; High Boiling Point Hydrocarbons (8015); Low Boiling Point Hydrocarbons (GAS)

ITEM NO.	SAMPLE NUMBER	DATE (90)	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8020	Acetone + Alcohols EPA 8015	High Boiling Point Hydrocarbons (8015)	Low Boiling Point Hydrocarbons (GAS)				REMARKS
1	7403-S6A	6-5	1315		X	Surface Soil - From 1' square grid	1-Liter Glass Jar	✓	✓	✓	✓	✓				
2	7403-S6B	6-5	1330		X	Surface Soil - From 1' depth with hand auger the Slide Hammer	1-6" Brass tube	✓	✓	✓	✓	✓				
3	7403-EW1	6-5	1430		X	Equipment Decon Wash	1-40ml VOA	✓	✓	✓		✓				
4	7403-EW1A	6-5	1432		X	Equipment Decon Wash	1-40ml VOA	✓	✓	✓		✓				Duplicate do not analyze
5	7403-EW2	6-5	1434		X	Equipment Decon Wash	1-40ml VOA	✓	✓	✓		✓				
6	7403-EW2A	6-5	1436		X	Equipment Decon Wash	1-40ml VOA	✓	✓							Duplicate do not analyse
7	7403-S7A	6-5	1440		X	Surface Soil - From 1' depth with hand auger the Slide Hammer	1-6" Brass Tube	✓	✓	✓	✓	✓				
8	7403-S7B	6-5	1505		X	Surface Soil - From 5' depth with hand auger the slide hammer	1-6" Brass Tube	✓	✓	✓	✓	✓				
9																
10																

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	~~1-8~~				
2					
3					
4	1-8	Scott Rice	[illegible signature]	6/5/90	1640

REMARKS: Sequoia Analytical Redwood City, CA
Normal 15 day TAT

SAMPLER'S SIGNATURE: Scott Rice

A Subsidiary of Environmental Treatment and Technologies Corp.
The Environmental Services Company

TRANSFER 3

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

JUL 0 1990
SAA

Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S1A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0504	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S1B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 18, 1990
Attention: Dan Thomas	Lab Number:	006-0505		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S2A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0506	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S2B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0507	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S3A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0508	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Maria Lee
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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S3B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0509	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S4A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 12, 1990
Attention: Dan Thomas	Lab Number:	006-0510		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S4B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0511	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S5A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 12, 1990
Attention: Dan Thomas	Lab Number:	006-0512		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S5B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0513		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
$\boxed{\text{Tetrachloroethene}}$	5.0	5.4
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S6A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0514	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S6B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0515	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S7A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0518		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S7B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0519	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW-1		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0516		Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW-2	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0517	Reported:	Jun 29, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S1A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0504	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S1B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0505		Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S2A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0506	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S2B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0507		Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S3A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0508	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S3B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0509	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	19
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S4A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 12, 1990
Attention: Dan Thomas	Lab Number: 006-0510	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S4B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0511		Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	27
Xylene	5.0	15

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S5A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 12, 1990
Attention: Dan Thomas	Lab Number: 006-0512	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S5B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0513	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S6A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0514		Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S6B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0515	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	18
Xylene	5.0	5.4

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, 57A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0518	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
$\boxed{\text{Toluene}}$	5.0	7.6
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S7B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number: 006-0519	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW1		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0516		Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/L	Sample Results μg/L
Benzene	0.50	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Xylene	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW2	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jun 11, 1990
Attention: Dan Thomas	Lab Number:	006-0517	Reported:	Jun 29, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/L	Sample Results μg/L
Benzene	0.50	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Xylene	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S1A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0504	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S1B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0505	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	12

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S2A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0506		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S2B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0507		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S3A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0508		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S3B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0509	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	44

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S4A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0510		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S4B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0511		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S6A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0512	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S6B		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0513		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Soil, S6A		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0514		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S6B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0515	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	25

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S7A	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0518	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript: Soil, S7B	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number: 006-0519	Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.50	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.50	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW1		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0516		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	700

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Sample Descript:	Water, EW2		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jun 19, 1990
Attention: Dan Thomas	Lab Number:	006-0517		Reported:	Jun 29, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 3550/8015			
Attention: Dan Thomas	First Sample #:	006-0504		Analyzed:	Jun 25, 1990
				Reported:	Jun 29, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
006-0504	S1A	50
006-0505	S1B	290
006-0506	S2A	N.D.
006-0507	S2B	N.D.
006-0508	S3A	1.4
006-0509	S3B	4.1
006-0510	S4A	28
006-0511	S4B	48

Detection Limits:	1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

Please Note:
Sample 006-0505 appears to contain diesel.

60507.JAS <14>

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 3550/8015			
Attention: Dan Thomas	First Sample #:	006-0512		Analyzed:	Jun 25, 1990
				Reported:	Jun 29, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
006-0512	S5A	15
006-0513	S5B	9.4
006-0514	S6A	N.D.
006-0515	S6B	N.D.
006-0518	S7A	N.D.
006-0519	S7B	N.D.

Detection Limits:	**1.0**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

Please Note:
Sample 006-0513 appears to contain diesel.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jun 15, 1990
Attention: Dan Thomas	First Sample #:	006-0504		Reported:	Jun 29, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-0504	S1A	N.D.	N.D.	N.D.	N.D.	0.0060
006-0505	S1B	730	0.12	0.13	0.37	0.66
006-0506	S2A	N.D.	0.0079	0.0055	N.D.	0.013
006-0507	S2B	N.D.	N.D.	N.D.	N.D.	N.D.
006-0508	S3A	N.D.	N.D.	0.017	N.D.	0.0061
006-0509	S3B	N.D.	N.D.	0.032	N.D.	0.0057
006-0510	S4A	N.D.	N.D.	N.D.	N.D.	0.016
006-0511	S4B	N.D.	N.D.	0.081	0.032	0.16
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jun 5, 1990
P.O. Drawer J	Matrix Descript: Soil	Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8015/8020	Analyzed:	Jun 15, 1990
Attention: Dan Thomas	First Sample #: 006-0512	Reported:	Jun 29, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-0512	S5A	1.4	N.D.	N.D.	N.D.	N.D.
006-0513	S5B	N.D.	N.D.	0.13	N.D.	N.D.
006-0514	S6A	N.D.	N.D.	0.0061	N.D.	0.0068
006-0515	S6B	N.D.	N.D.	0.038	0.052	0.15
006-0518	S7A	N.D.	N.D.	0.0084	N.D.	0.011
006-0519	S7B	N.D.	0.0059	0.0074	0.0026	0.012

Detection Limits:		1.0	0.0050	0.0050	0.0050	0.0050

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jun 5, 1990
P.O. Drawer J	Matrix Descript:	Water		Received:	Jun 5, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jun 8, 1990
Attention: Dan Thomas	First Sample #:	006-0516		Reported:	Jun 29, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
006-0516	EW1	N.D.	N.D.	N.D.	N.D.	N.D.
006-0517	EW2	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		30	0.30	0.30	0.30	0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 54957

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: JASCO
PROJECT LOCATION: MOUNTAIN VIEW, CA
PROJ. NO.: 7403
PROJECT CONTACT: SCOTT RICE
PROJECT TELEPHONE NO: (916) 928-1819
CLIENT'S REPRESENTATIVE: Dan Thomas
PROJECT MANAGER/SUPERVISOR: SCOTT RICE

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): EPA 8010; EPA 8020; EPA 8015 LOW BOILING FRACTION; 8015 High Boiling

15 DAY TAT

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8020	EPA 8015 LOW BOILING FRACTION	8015 High Boiling					REMARKS
1	V11-2	6/20/90	0930		X	SOIL SAMPLE, V-11 2 FEET	1-BRASS SLEEVE	X	X	X	X					
2	V11-5	6/20/90	0940		X	SOIL SAMPLE, V-11 5 FEET	1-BRASS SLEEVE	X	X	X	X					
3	V11-10	6/20/90	0951		X	SOIL SAMPLE, V-11 10 FEET	1-BRASS SLEEVE	X	X	X	X					
4	V11-15	6/20/90	1015		X	SOIL SAMPLE, V-11 15 FEET	1-BRASS SLEEVE	X	X	X	X					
5	V11-20	6/20/90	1032		X	SOIL SAMPLE, V-11 20 FEET	1-BRASS SLEEVE	X	X	X	X					
6	V11-25	6/20/90	1058		X	SOIL SAMPLE, V-11 25 FEET	1-BRASS SLEEVE	X	X	X	X					
7	V11-30	6/20/90	1116		X	SOIL SAMPLE, V-11 30 FEET	1-BRASS SLEEVE	X	X	X	X					
8	EB-1	6/20/90	1530		X	H_2O SAMPLE	2-40mL VOA	X	X							
9	TB-1	6/20/90	1545		X	H_2O SAMPLE	2-40mL VOA	X	X							
10	V12-15	6/20/90	1700		X	SOIL SAMPLE, V-12 15 FEET	1-BRASS SLEEVE	X	X	X	X					

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-10	[signature]	Scott Rice	6/21	1700
2	1-10	Scott Rice	[signature]	6/22	1235
3					
4					

REMARKS
TO: SEQUOIA ANALYTICAL
REDWOOD CITY
RESULTS TO: DAN THOMAS
JASCO

SAMPLER'S SIGNATURE [signature] #2100

TRANSFER 3

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 55082

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Jasco Chemical
PROJECT LOCATION: Mountain View, CA
PROJ. NO: 7403
PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO.: 9169281819
CLIENT'S REPRESENTATIVE: Dan Thomas
PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): EPA 8010; EPA 8020; EPA 8015 Low Boiling; EPA 8015 High Boiling; EPA 8015 Acetone + Alcohols

15 day TAT

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8020	EPA 8015 Low Boiling	EPA 8015 High Boiling	EPA 8015 Acetone + Alcohols				REMARKS
1	V-12-25	6/21	1012		X	Soil Sample V-12 25 feet	1 - brass sleeve	X	X	X	X					
2	V-12-30	6/21	1030		X	Soil Sample V-12 30 feet	1 - brass sleeve	X	X	X	X					
3	V-11	6/22	1020		X	Groundwater V-~~12~~ 11	6 VOA 2-1l	X	X	X	X	X				
4	V-12	6/22	1100		X	Groundwater V-12	6 VOA 2-1l	X	X	X	X	X				
5	EW 2	6/22	1115		X	Equip Wash of Bailer	2 VOA	X	X			X				
6																
7																
8																
9																
10																

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1 - 5	Scott Rice	[illegible signature]	6/22/??	1235
2					
3					
4					

REMARKS
To: Sequoia Analytical
Redwood City

Results to Dan Thomas

SAMPLER'S SIGNATURE: Scott Rice

A Subsidiary of Environmental Treatment and Technologies Corp.
The Environmental Services Company

TRANSFER 3

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RECEIVED
JUL 24 1990

Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	First Sample #:	006-3973		Reported:	Jul 18, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-3973	V11-2	N.D.	N.D.	N.D.	N.D.	N.D.
006-3974	V11-5	N.D.	N.D.	N.D.	N.D.	N.D.
006-3975	V11-10	N.D.	N.D.	N.D.	N.D.	N.D.
006-3976	V11-15	N.D.	N.D.	N.D.	N.D.	N.D.
006-3977	V11-20	N.D.	N.D.	N.D.	N.D.	N.D.
006-3978	V11-25	N.D.	N.D.	N.D.	N.D.	N.D.
006-3979	V11-30	N.D.	N.D.	N.D.	N.D.	N.D.
006-3980	V12-15	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 5, 1990
Attention: Dan Thomas	First Sample #:	006-4066		Reported:	Jul 12, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
006-4066	V-12-25	N.D.	0.0064	0.022	0.016	0.075
006-4067	V-12-30	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		1.0	0.0050	0.0050	0.0050	0.0050

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

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Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Matrix Descript: Soil	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 3550/8015		
Attention: Dan Thomas	First Sample #: 006-3973	Analyzed:	Jul 12, 1990
		Reported:	Jul 18, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
006-3973	V11-2	2.5
006-3974	V11-5	N.D.
006-3975	V11-10	N.D.
006-3976	V11-15	N.D.
006-3977	V11-20	N.D.
006-3978	V11-25	N.D.
006-3979	V11-30	N.D.
006-3980	V12-15	N.D.

Detection Limits:	1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jun 21, 1990
P.O. Drawer J	Matrix Descript: Soil	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 3550/8015	Analyzed:	Jul 10, 1990
Attention: Dan Thomas	First Sample #: 006-4066	Reported:	Jul 12, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
006-4066	V-12-25	N.D.
006-4067	V-12-25	N.D.

Detection Limits:	**1.0**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-2		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3973		Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

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Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID: #74[illegible]8	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-5	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3974	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-10		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3975		Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-15	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3976	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-20	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3977	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-25	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3978	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-30	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3979	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-2	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3973	Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-5		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3974		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-10		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3975		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V11-15	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3976	Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-20		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3977		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-25		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3978		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V11-30	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3979	Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Soil, V12-15	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3980	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript:	Soil, V-12-25		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-4066		Reported:	Jul 12, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript:	Soil, V-12-30		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-4067		Reported:	Jul 12, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Soil, V12-15		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3980		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript:	Soil, V-12-25		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-4066		Reported:	Jul 12, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID: #7403	Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript: Soil, V-12-30	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-4067	Reported:	Jul 12, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 49090

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Jasco
PROJECT LOCATION: Mountain View
PROJ NO.: 7403
PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO: 916 928 1819
CLIENT'S REPRESENTATIVE: Don Thomas
PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8020	EPA 8015 (Low Boiling)	EPA 8015 (Alcohols + Acetone)					REMARKS
1	TB	7/10	–		✓	Travel Blank	4	X	X		X					4 VOA
2	B1-3	7/13	0938		✓	Soil sample 3', B1	1	X	X	X	X					1 - 6" brass liner
3	B1-5	7/13	0945		✓	Soil sample 5', B1	1	X	X	X	X					"
4	B1-10	"	0955		✓	Soil sample 10', B1	1	X	X	X	X					"
5	B1-15	"	1005		✓	Soil sample 15', B1	1	X	X	X	X					"
6	B1-20	"	1015		✓	Soil sample 20, B1	1	X	X	X	X					"
7	B1-25	"	1025		✓	Soil sample 25', B1	1	X	X	X	X					"
8	B1-30	"	1040		✓	Soil sample 30', B1	1	X	X	X	X					"
9	B2-3	"	1122		✓	Soil sample 3' B2	1	X	X	X	X					"
10	B2-5	"	1130		✓	Soil sample 5', B2	1	X	X	X	X					"

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-10	Scott Rice		7/16	
2					
3					
4					

REMARKS
to: Sequoia Analytical
Results by 7/27/90

SAMPLER'S SIGNATURE: Scott Rice

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TRANSFER 3

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 49015

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Josco
PROJECT LOCATION: Mountain View, CA
PROJ NO.: 7403
PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO: 916 928 1819
CLIENT'S REPRESENTATIVE: Don Thomas
PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): EPA 8010; EPA 8020; EPA 8015 (Low Boiling Pt HC); EPA 8015 (Alcohols 4 Acetone)

ITEM NO	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8020	EPA 8015 (Low Boiling Pt HC)	EPA 8015 (Alcohols 4 Acetone)				REMARKS
1	B2-10	7/13	1145		✓	Soil sample 10', B2	1	X	X	X	X				1 - 6" brass liner
2	B2-15	"	1150		✓	Soil Sample 15', B2	1	X	X	X	X				"
3	B2-20	"	1200		✓	Soil Sample 20', B2	1	X	X	X	X				"
4	B2-25	"	1208		✓	Soil Sample 25', B2	1	X	X	X	X				"
5	B2-30	"	1218		✓	Soil Sample 30', B2	1	X	X	X	X				"
6	EW3	"	1235		✓	Equip. Wash	4	X	X		X				4 VOA
7	B3-3	"	1330		✓	Soil Sample 3', B3	1	X	X	X	X				1 - 6" brass liner
8	B3-5	"	1336		✓	Soil Sample 5', B3	1	X	X	X	X				"
9	B3-10	"	1350		✓	Soil Sample 10', B3	1	X	X	X	X				"
10	B3-15	"	1358		✓	Soil Sample 15', B3	1	X	X	X	X				"

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-10	Scott Rice		7/16	
2					
3					
4					

REMARKS: to: Sequoia Analytical
Results by 7/27/90

SAMPLER'S SIGNATURE: Scott Rice

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TRANSFER 3

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 49024

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Josco
PROJECT LOCATION: Mountain View, CA
PROJ. NO: 7403
PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO.: 916 928 1819
CLIENT'S REPRESENTATIVE: Don Thomas
PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS)

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8015 (Alcohols + Acetone)	EPA 8015 (Low Boiling Pt HC)	EPA 8020				REMARKS
1	B3-20	7/13	1408		✓	Soil Sample 20', B3	1	X	X	X	X				1-6" brass liner
2	B3-25	11	1419		✓	Soil Sample 25', B3	1	X	X	X	X				11
3	B3-30	11	1430		✓	Soil Sample 30', B3	1	X	X	X	X				11
4	B4-5	7/14	0815		✓	Soil Sample 5', B4	1	X	X	X	X				11
5	B4-10	11	0820		✓	Soil Sample 10', B4	1	X	X	X	X				11
6	B4-15	11	0830		✓	Soil Sample 15', B4	1	X	X	X	X				11
7	B4-20	11	0840		✓	Soil Sample 20', B4	1	X	X	X	X				11
8	B4-25	11	0850		✓	Soil Sample 25', B4	1	X	X	X	X				11
9	B4-30	11	0900		✓	Soil Sample 30', B4	1	X	X	X	X				11
10	B4-20a	11	0840		✓	Soil Sample 35', B4	1	X	X	X	X				11

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-10	Scott Rice		7/16	
2					
3					
4					

REMARKS: to: Sequoia Analytical
Results by 7/07/90

SAMPLER'S SIGNATURE: Scott Rice

OHM

CHAIN-OF-CUSTODY RECORD

Form 0019
Field Technical Services
Rev. 03/88

No. 49025

PLEASE PRESS HARD. ALL 4 PARTS MUST BE READABLE.

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

PROJECT NAME: Josco	PROJECT LOCATION: Mountain View, CA
PROJ. NO: 7403	PROJECT CONTACT: Scott Rice
PROJECT TELEPHONE NO: 916 928 1819	
CLIENT'S REPRESENTATIVE: Don Thomas	PROJECT MANAGER/SUPERVISOR: Scott Rice

ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS): EPA 8010; EPA 8015 (Alcohols + Acetone); EPA 8015 (Low Boiling Pt HC); EPA 8020

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	EPA 8010	EPA 8015 (Alcohols + Acetone)	EPA 8015 (Low Boiling Pt HC)	EPA 8020				REMARKS
1	EW 4	7/14	0915		✓	Equip. Wash	4	X	X	X	X				4 VOA
2	B5-3	〃	1134		✓	Soil Sample 3', B5	1	X	X	X	X				1 - 6" brass liner
3	B5-5	〃	1150		✓	Soil Sample 5', B5	1	X	X	X	X				〃
4	B5-10	〃	1200		✓	Soil Sample 10', B5	1	X	X	X	X				〃
5	B5-15	〃	1210		✓	Soil Sample 15', B5	1	X	X	X	X				〃
6	B5-20	〃	1218		✓	Soil Sample 20', B5	1	X	X	X	X				〃
7	B5-25	〃	1225		✓	Soil Sample 25', B5	1	X	X	X	X				〃
8	B5-30	〃	1241		✓	Soil Sample 30', B5	1	X	X	X	X				〃
9	B5-30a	〃	1241		✓	Soil Sample 30.5', B5	1	X	X	X	X				〃
10															

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	1-9	Scott Rice		7/16	
2					
3					
4					

REMARKS: to: Sequoia Analytical
Results by 7/27/90

SAMPLER'S SIGNATURE: Scott Rice

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The Environmental Services Company

TRANSFER 3

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Matrix Descript:	Soil	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	First Sample #:	007-2658	Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
007-2658	B1-3	2,600	N.D.	37	N.D.	11
007-2659	B1-5	6,700	N.D.	110	N.D.	37
007-2660	B1-10	170	N.D.	1.1	N.D.	0.87
007-2661	B1-15	1,300	N.D.	3.4	N.D.	5.5
007-2662	B1-20	120	N.D.	4.1	N.D.	2.6
007-2663	B1-25	380	N.D.	6.3	N.D.	5.9
007-2664	B1-30	38	N.D.	1.4	0.37	1.5
Detection Limits:		**20**	**0.10**	**0.20**	**0.20**	**0.20**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL
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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	First Sample #:	007-2665		Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
007-2665	B2-3	N.D.	N.D.	23	N.D.	N.D.
007-2666	B2-5	N.D.	N.D.	N.D.	N.D.	N.D.
007-2667	B2-10	N.D.	N.D.	N.D.	N.D.	N.D.
007-2668	B2-15	2,800	N.D.	5.0	N.D.	10
007-2669	B2-20	1,300	N.D.	N.D.	N.D.	N.D.
007-2670	B2-25	2,600	N.D.	85	N.D.	38
007-2671	B2-30	N.D.	N.D.	18	N.D.	26
007-2672	B3-3	N.D.	N.D.	18	N.D.	N.D.
007-2673	B3-5	N.D.	N.D.	N.D.	N.D.	N.D.
007-2674	B3-10	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 24, 1990
Attention: Dan Thomas	First Sample #:	007-2675		Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
007-2675	B3-15	N.D.	N.D.	N.D.	N.D.	N.D.
007-2676	B3-20	N.D.	N.D.	N.D.	N.D.	N.D.
007-2677	B3-25	N.D.	N.D.	8.0	N.D.	N.D.
007-2678	B3-30	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		1.0	0.0050	0.0050	0.0050	0.0050

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 24, 1990
Attention: Dan Thomas	First Sample #:	007-2679		Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
007-2679	B4-5	N.D.	N.D.	N.D.	N.D.	N.D.
007-2680	B4-10	N.D.	N.D.	N.D.	N.D.	N.D.
007-2681	B4-15	N.D.	N.D.	N.D.	N.D.	N.D.
007-2682	B4-20	N.D.	N.D.	N.D.	N.D.	N.D.
007-2683	B4-25	N.D.	N.D.	N.D.	N.D.	N.D.
007-2684	B4-30	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Matrix Descript:	Soil		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	First Sample #:	007-2685		Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
007-2685	B4-20a	N.D.	N.D.	N.D.	N.D.	N.D.
007-2686	B5-3	N.D.	N.D.	N.D.	N.D.	N.D.
007-2687	B5-5	N.D.	N.D.	N.D.	N.D.	N.D.
007-2688	B5-10	N.D.	N.D.	N.D.	N.D.	N.D.
007-2689	B5-15	N.D.	N.D.	N.D.	N.D.	N.D.
007-2690	B5-20	N.D.	N.D.	5.0	N.D.	N.D.
007-2691	B5-25	N.D.	N.D.	N.D.	N.D.	N.D.
007-2692	B5-30	N.D.	N.D.	N.D.	N.D.	N.D.
007-2693	B5-30a	N.D.	N.D.	10	N.D.	N.D.
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript.:	Water, EW4		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/ 8015/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2696		Reported:	Aug 2, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit μg/L (ppb)	Sample Results μg/L (ppb)
Low to Medium Boiling Point Hydrocarbons	30	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes	0.30	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2658		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	120
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	390
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	900
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	N.D.
1,1,1-Trichloroethane	50	15,000
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

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Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	000-2659	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	380
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	1,700
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	65
1,1,1-Trichloroethane	50	61,000
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	50
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

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72658.JAS <8>

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2660		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	25	N.D.
Bromoform	25	N.D.
Bromomethane	25	N.D.
Carbon tetrachloride	25	N.D.
Chlorobenzene	25	N.D.
Chloroethane	125	N.D.
2-Chloroethylvinyl ether	25	N.D.
Chloroform	25	N.D.
Chloromethane	25	N.D.
Dibromochloromethane	25	N.D.
1,2-Dichlorobenzene	50	N.D.
1,3-Dichlorobenzene	50	N.D.
1,4-Dichlorobenzene	50	N.D.
1,1-Dichloroethane	**25**	**38**
1,2-Dichloroethane	25	N.D.
1,1-Dichloroethene	**25**	**25**
Total 1,2-Dichloroethene	25	N.D.
1,2-Dichloropropane	25	N.D.
cis-1,3-Dichloropropene	25	N.D.
trans-1,3-Dichloropropene	25	N.D.
Methylene chloride	**50**	**750**
1,1,2,2-Tetrachloroethane	25	N.D.
Tetrachloroethene	25	N.D.
1,1,1-Trichloroethane	**25**	**590**
1,1,2-Trichloroethane	25	N.D.
Trichloroethene	25	N.D.
Trichlorofluoromethane	25	N.D.
Vinyl chloride	50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-15	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2661	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	N.D.
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	170
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	52
1,1,1-Trichloroethane	50	5,300
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2662	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	N.D.
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	720
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	240
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	4,200
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	N.D.
1,1,1-Trichloroethane	50	6,800
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2663	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	170
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	2,200
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	150
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	3,200
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	4,000
1,1,1-Trichloroethane	50	N.D.
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2664	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	50	N.D.
Bromoform	50	110
Bromomethane	50	N.D.
Carbon tetrachloride	50	N.D.
Chlorobenzene	50	N.D.
Chloroethane	250	N.D.
2-Chloroethylvinyl ether	50	N.D.
Chloroform	50	N.D.
Chloromethane	50	N.D.
Dibromochloromethane	50	N.D.
1,2-Dichlorobenzene	100	N.D.
1,3-Dichlorobenzene	100	N.D.
1,4-Dichlorobenzene	100	N.D.
1,1-Dichloroethane	50	3,000
1,2-Dichloroethane	50	N.D.
1,1-Dichloroethene	50	N.D.
Total 1,2-Dichloroethene	50	N.D.
1,2-Dichloropropane	50	N.D.
cis-1,3-Dichloropropene	50	N.D.
trans-1,3-Dichloropropene	50	N.D.
Methylene chloride	100	N.D.
1,1,2,2-Tetrachloroethane	50	N.D.
Tetrachloroethene	50	N.D.
1,1,1-Trichloroethane	50	N.D.
1,1,2-Trichloroethane	50	N.D.
Trichloroethene	50	N.D.
Trichlorofluoromethane	50	N.D.
Vinyl chloride	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2665		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	20
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	99
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	15
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2666	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	16
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	52
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number: 007-2667	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	36
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	140
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	16
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-15	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number: 007-2668	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	**5.0**	**110**
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	**5.0**	**30**
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	**10**	**270**
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	**5.0**	**95**
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	**5.0**	**7.3**
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2669	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	83
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	710
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	52
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2670		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	19
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	410
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	36
Total 1,2-Dichloroethene	5.0	15
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	16
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2671		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2672		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	14
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2673		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2674		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2675		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2676		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B3-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number: 007-2677	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2678		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B4-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number: 007-2679	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	**5.0**	**5.0**
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B4-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2680	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	14
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco		Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J		Sample Descript:	Soil, B4-15	Received:	Jul 16, 1990
Mountain View, CA 94042		Analysis Method:	EPA 5030/8010	Analyzed:	Jul 20, 1990
Attention: Dan Thomas		Lab Number:	007-2681	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	22
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	87
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2682		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	**5.0**	**12**
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	**5.0**	**24**
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2683	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	**5.0**	**62**
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	**5.0**	**45**
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	**5.0**	**29**
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2684		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	**5.0**	**72**
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	**5.0**	**100**
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-20a	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number: 007-2685	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	69
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	30
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B5-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2686	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2687		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2688		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2689		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2690	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2691	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	10
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B5-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number: 007-2692	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-30a		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2693		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 10, 1990
P.O. Drawer J	Sample Descript:	Water, Trip Blank		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2694		Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Water, EW-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2695	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Water, EW-4	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number: 007-2696	Reported:	Aug 2, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B1-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number: 007-2658	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	37,000
Xylene	100	11,000

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2659		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	110,000
Xylene	100	37,000

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2660		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	1,100
Xylene	100	870

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2661		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	3,400
Xylene	100	5,500

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B1-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number: 007-2662	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	4,100
Xylene	100	2,600

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2663		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	N.D.
Toluene	100	8,300
Xylene	100	5,900

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2664		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	100	N.D.
Chlorobenzene	100	N.D.
1,4-Dichlorobenzene	200	N.D.
1,3-Dichlorobenzene	200	N.D.
1,2-Dichlorobenzene	200	N.D.
Ethyl Benzene	100	370
Toluene	100	1,400
Xylene	100	1,500

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number: 007-2665	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	23
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2666		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2667	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-15	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2668	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	5
Xylene	5.0	10

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2669	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2670		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	85
Xylene	5.0	38

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number: 007-2671	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	18
Xylene	5.0	26

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2672		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
$\boxed{\text{Toluene}}$	5.0	18
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2673	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2674		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2675		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2676	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2677	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	8
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2678	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number: 007-2679	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2680	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-15	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2681	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2682	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2683		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020	Analyzed:	Jul 25, 1990
Attention: Dan Thomas	Lab Number:	007-2684	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-20a		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2685		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B5-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2686	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2687		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2688		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2689		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number:	007-2690		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	10
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2691		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 23, 1990
Attention: Dan Thomas	Lab Number:	007-2692		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit μg/kg	Sample Results μg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B5-30a	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 20, 1990
Attention: Dan Thomas	Lab Number: 007-2693	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	10
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2658	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	30	N.D.
Ethanol	60	N.D.
Isopropanol	30	76
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2659	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	15	N.D.
Ethanol	30	N.D.
Isopropanol	15	N.D.
Methanol	30	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B1-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number: 007-2660	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	30	N.D.
Ethanol	60	N.D.
Isopropanol	30	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2661		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2662	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2663		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	30	N.D.
Ethanol	60	N.D.
Isopropanol	30	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B1-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2664		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2665	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Soil, B2-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number: 007-2666	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2667		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2668		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2669		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2670		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B2-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2671		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2672		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2673	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2674	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2675		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2676	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B3-25	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2677	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Soil, B30-20	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2678	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-5	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number: 007-2679	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript: Soil, B4-10	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number: 007-2680	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2681		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2682		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2683		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-30		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2684		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B4-20a		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2685		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-3		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2686		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-5		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2687		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-10		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2688		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-15		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2689		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-20		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2690		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-25		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2691		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-30	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2692	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Soil, B5-30a		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2693		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acetone	0.5	N.D.
Ethanol	1.0	N.D.
Isopropanol	0.5	N.D.
Methanol	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID: #7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript: Water, EW-3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number: 007-2695	Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Xylene	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Marie Lee
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Water, Trip Blank		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2694		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Xylene	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403		Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Water, EW-4		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 19, 1990
Attention: Dan Thomas	Lab Number:	007-2696		Reported:	Aug 2, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/L	Sample Results µg/L
Benzene	0.50	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.50	N.D.
Toluene	0.50	N.D.
Xylene	0.50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Jasco	Client Project ID:	#7403	Sampled:	Jul 14, 1990
P.O. Drawer J	Sample Descript:	Water, EW4	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2696	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403	Sampled:	Jul 13, 1990
P.O. Drawer J	Sample Descript:	Water, EW3	Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2695	Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	Jul 10, 1990
P.O. Drawer J	Sample Descript:	Water, Travel Blank		Received:	Jul 16, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 27, 1990
Attention: Dan Thomas	Lab Number:	007-2694		Reported:	Aug 2, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

Maria Lee
Project Manager

VOLUME III
APPENDICES G THROUGH I

DRAFT REMEDIAL INVESTIGATION REPORT
JASCO CHEMICAL CORPORATION
1710 VILLA STREET
MOUNTAIN VIEW, CALIFORNIA

APPENDIX G
LABORATORY REPORTS OF ANALYSES
OF GROUNDWATER SAMPLES
1984 TO PRESENT

V-1

TABLE 1

Results Of Chemical Analysis

Analyte	Soil Composite (ug/Kg)	Water (ug/L)	Field Blank (ug/L)
Pentachlorophenol	<10	0.2	<0.1
Purgeable Solvents:			
Requested Compounds			
Acetone	< 20	98	< 10
Deodorized Kerosene[1]	<1000	< 200	< 200
Dichloromethane	<20	< 5	< 5
Ethanol	< 100	< 20	<20
Isopropanol	<100	< 30	<30
Lacquer Thinner[2]	< 20	<5	< 5
Methanol	<100	95	<30
Paint Thinner[3]	<600	860	<100
Other Compounds[4]			
Methyl ethyl ketone	<30	4	< 4
1, 1, 1-Trichloroethane	<5	9	<1
Trichloroethylene	<5	< 9	<1
Unidentified peaks	0	0	0

ug? field blank?

1. Parks brand deodorized kerosene
2. JASCO brand lacquer thinner
3. Parks brand paint thinner
4. Compounds detected in samples, but not reportedly stored on JASCO site

ANATEC
LABORATORIES
INC.

435 Tesconi Circle • Santa Rosa, California 95401 • 707-526-7200

Patrick Casey
Questa Engineering
PO Box 356
Pt. Richmond, CA 94807

October 6, 1986986
ANATEC Log No: 8289 (1-3)
Series No: 216/006
Client Ref: (V) P. Casey

Subject: Analysis of Two Soil and One Water Samples Received August 27, 1986

Dear Mr. Casey:

Analysis of the samples referenced above has been completed. Samples were received by the laboratory in insulated shipping containers. During the laboratory log-in process, samples were noted to be cool, intact and completely and legibly labeled. Each of the soil samples were submitted as three brass rings with directions to form one composite sample for analysis, respectively. The water sample was submitted in each of two types of containers; these were 40-milliliter glass vials with Teflon septa and plastic screw caps, and one-liter amber glass bottles with Teflon capliners and plastic screw caps. The water sample and composite soil sample were analyzed to measure a variety of volatile species including individual compounds and three complex hydrocarbon mixtures. Contents of one-liter bottles were analyzed to measure pentachlorophenol.

Volatile species measurements were made by purge-and-trap sampling gas chromatography. Briefly, reagent helium is bubbled through five milliliter portions of water sample or soil sample-water slurries in a closed system. Helium and volatile organic compounds thus sparged from the sample pass through a "trap" containing various sorbents which retain organic compounds. The trap is subsequently heated and organic compounds thereby desorbed are swept onto the analytical column of a gas chromatograph equipped with a flame ionization detector. Preparation and analysis of samples is accompanied by similar treatment of standards and sample spikes prepared with neat, reagent grade compounds, or, in the case of complex mixtures, reference samples of those mixtures supplied previously with samples. Identification of compounds is based on both absolute and relative retention times; quantitation is based on ratios of sample and standard peak areas (i.e., "external standardization").

Pentachlorophenol analyses were conducted by gas chromatography of the acetate derivative produced by reaction with acetic anhydride. Derivatives are identified and quantitated as for volatile analytes except that the process is conducted with an electron capture rather than flame ionization detector.

Results of testing are summarized in Table 1. Please feel welcome to contact us should you have questions regarding procedures or results.

Sincerely,

Greg Anderson, Director
Analytical Laboratories

Table 1. Summarized Testing Results[1]

Analyte	Descriptor, Lab No. & Results: 5 to 15 feet Composite (Soil) (8289-1, -2,-3)	20 to 35 feet Composite (Soil) (8289-4,-5,-6)	V32 (Water) (8289-7, -8,-9,-11)
Deodorized kerosene	<400	<400	<100
Lacquer thinner	<200	<200	<50
Paint thinner	1200	<400	<100
Methyl alcohol	<120	<120	<30
Ethyl alcohol	<120	<120	<20
Isopropyl alcohol	<120	<120	<20
Dichloromethane	<50	<50	3200
Acetone	<100	<100	<15
Methyl ethyl ketone	<100	<100	<15
1,1,1-trichloroethane	<50	<50	<6
Trichloroethylene	<50	<50	<6
Pentachlorophenol	200	8.6	1.5

[1]Results are expressed in units of micrograms analyte per kilogram soil sample, as received basis, and micrograms analyte per liter water sample.

Table 3

WESCO Laboratories

Date: December 1, 1986
Client: Questa Engineering
Submitted by: Pat Casey
Report to: Pat Casey
WESCO Job #: QEA 8616

Client Job/P.O. #: Solvent Mixes 11/5/86
Date collected: 11-05-86
Date submitted: 11-05-86
& type of sample(s): 5 Water
9 Soil
Page 1 of 3

depth of water

ANALYTE	NOTE	LAB NUMBERS CLIENT ID 6045 Water V-3	6055 Water V-1	6056 Water V-2
CH2Cl2 (ug/l)	1	7.6	18	142000
TCE (ug/l)	1	< 0.5	N/A	N/A
1,1,1, TCA (ug/l)	1	< 0.5	N/A	N/A
Methyl ethyl ketone (mg/l)	2	< 1	N/A	N/A
Methanol (mg/l)	2	2.7	N/A	N/A
Ethanol (mg/l)	2	< 1	N/A	N/A
Acetone (mg/l)	2	< 1	N/A	N/A
Isopropanol (mg/l)	2	< 1	N/A	N/A
Lacquer Thinner (mg/l)	3	< 0.050	N/A	N/A
Paint Thinner (mg/l)	3	< 0.050	N/A	N/A
Kerosene (mg/l)	3	< 0.100	N/A	N/A

ANALYTE	NOTE	LAB NUMBERS CLIENT ID 6057 Water V-3	6058 Water Field Blank	
CH2Cl2 (ug/l)	1	N/A	4.2	
TCE (ug/l)	1	N/A	< 0.5	
1,1,1, TCA (ug/l)	1	N/A	< 0.5	
Lacquer Thinner (mg/l)	3	N/A	< 0.050	
Paint Thinner (mg/l)	3	N/A	< 0.050	
Kerosene (mg/l)	3	N/A	< 0.100	
Pentachlorophenol (ug/l)	4	50.	N/A	

METHOD(S):
Note 1 - EPA Method 601.
Note 2 - EPA Method 8015.
Note 3 - EPA Method 5020.
Note 4 - EPA Method 604.

Michael Cobb
Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94947 415 883-6425
A Division of Western Ecological Services Company

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

[illegible]hler Associates
[illegible]23 Corporation Way
Palo Alto, CA 94303
Attn: Robert Breynaert

Date Sampled: 08/20/87
Date Received: 08/20/87
Date Extracted: 09/03/87
Date Reported: 09/10/87
Project No. JCO-104H

Sample Number	Sample Description
7081483	Water, JCO-817, Tap

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein		-	trans-1,2-Dichloroethene	<	0.5
Acrylonitrile		-	1,2-Dichloropropane	<	0.5
Benzene		-	1,3-Dichloropropene	<	0.[illegible]
Bromomethane	<	0.5	Ethylbenzene		-
Bromodichloromethane		0.71	Methylene chloride	<	0.5
Bromoform	<	0.5	1,1,2,2-Tetrachloroethane	<	0.[illegible]
Carbon tetrachloride	<	0.5	Tetrachloroethene	<	0.5
Chlorobenzene		-	1,1,1-Trichloroethane	<	0.5
Chloroethane	<	0.5	1,1,2-Trichloroethane	<	0.5
2-Chloroethylvinyl ether	<	0.5	Trichloroethene	<	0.5
Chloroform		71	Toluene		-
Chloromethane	<	0.5	Vinyl chloride	<	0.5
Dibromochloromethane	<	0.5	1,2-Dichlorobenzene	<	0.5
1,1-Dichloroethane	<	0.5	1,3-Dichlorobenzene	<	0.5
1,2-Dichloroethane	<	0.5	1,4-Dichlorobenzene	<	0.5
1,1-Dichloroethene	<	0.2			

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 601 of the EPA was used for this analysis.

mc:

SEQUOIA Analytical Laboratory

2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Kahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Robert Breynaert

Date Sampled: 08/20/87
Date Received: 08/20/87
Date Extracted: 09/03/87
Date Reported: 09/10/87
Project No. JCO-104H

Sample Number
7081484

Sample Description
Water, JCO-817, Tank

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Acrolein		-
Acrylonitrile		-
Benzene		-
Bromomethane	<	0.5
Bromodichloromethane		1.1
Bromoform	<	0.5
Carbon tetrachloride	<	0.5
Chlorobenzene		-
Chloroethane	<	0.5
2-Chloroethylvinyl ether	<	0.5
Chloroform		72
Chloromethane	<	0.5
Dibromochloromethane	<	0.5
1,1-Dichloroethane	<	0.5
1,2-Dichloroethane	<	0.5
1,1-Dichloroethene	<	0.2
trans-1,2-Dichloroethene	<	0.5
1,2-Dichloropropane	<	0.5
1,3-Dichloropropene	<	0.5
Ethylbenzene		-
Methylene chloride	<	0.5
1,1,2,2-Tetrachloroethane	<	0.5
Tetrachloroethene	<	0.5
1,1,1-Trichloroethane	<	0.5
1,1,2-Trichloroethane	<	0.5
Trichloroethene	<	0.5
Toluene		-
Vinyl chloride	<	0.5
1,2-Dichlorobenzene	<	0.5
1,3-Dichlorobenzene	<	0.5
1,4-Dichlorobenzene	<	0.5

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 601 of the EPA was used for this analysis.

ncr

ANAMETRIX, INC.
LABORATORY SERVICES
ENVIRONMENTAL • ANALYTICAL CHEMISTRY
2754 AJELLO DRIVE • SAN JOSE, CA 95111 • (408) 629-1132

RECEIVED
OCT 5 - 1987
WAHLER ASSOCIATES

September 9, 1987
Work Order Number 8708113
Date Received 8/31/87
Project No. JCO-104H

Robert Breynaert
Wahler Associates
P.O. Box 10023
Palo Alto, CA 94303

One water sample was received for analysis of halogenated and aromatic volatile organics by gas chromatography, using the following EPA method(s):

ANAMETRIX I.D.	SAMPLE I.D.	METHOD(S)
8708113-01	U-2 (V-2)	601/602

RESULTS

See enclosed data sheets, Forms 1-1 thru 2-1.

EXTRA COMPOUNDS

Confirmation by GC/MS indicates that the following compounds were present below instrument detection limit: chloroethane; 1,1-dichloroethene; cis-1,2-dichloroethene; trichloroethene. Also detected by GC/MS were acetone, 2-butanone (methyl ethyl ketone).

DOCUMENT INVENTORY

See enclosed documents 1 thru 17.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

Sarah Schoen

Sarah Schoen, Ph.D.
GC Supervisor

SPS/qp

ORGANICS DATA ANALYSIS SHEET - EPA METHOD 601/8010

Sample I.D. : U-2 (4-2)
Matrix : WATER
Date sampled : 8-27-87
Date analyzed : 9-8-87
Dilution : 1:100

Anametrix I.D. : 8708113-0:
Analyst : MCS
Supervisor : SN
Date released : 9-9-87

CAS #		Compound Name	Det. Limit (ug/l)	(ug/l)	Q
74-87-3	*	Chloromethane	100		U
74-83-9	*	Bromomethane	50		U
75-71-8	*	Dichlorodifluoromethane	100		U
75-01-4	*	Vinyl Chloride	50		U
75-00-3	*	Chloroethane	50		U
75-09-2	*	Methylene Chloride	50	1700	+
79-69-4	*	Trichlorofluoromethane	50		U
75-35-4	*	1,1-Dichloroethene	50		U
75-34-3	*	1,1-Dichloroethane	50	630	+
156-59-2	#	Cis-1,2-Dichloroethene	50		U
156-60-5	*	Trans-1,2-Dichloroethene	50		U
67-66-3	*	Chloroform	50		U
76-13-1	#	Trichlorotrifluoroethane	50		U
107-06-2	*	1,2-Dichloroethane	50		U
71-55-6	*	1,1,1-Trichloroethane	50	200	+
56-23-5	*	Carbon Tetrachloride	50		U
75-27-4	*	Bromodichloromethane	50		U
78-87-5	*	1,2-Dichloropropane	50		U
10061-02-6	*	Trans-1,3-Dichloropropene	50		U
79-01-6	*	Trichloroethene	50		U
124-48-1	*	Dibromochloromethane	50		U
79-00-5	*	1,1,2-Trichloroethane	50		U
10061-01-5	*	cis-1,3-Dichloropropene	50		U
110-75-8	*	2-Chloroethylvinylether	100		U
75-25-2	*	Bromoform	50		U
127-18-4	*	Tetrachloroethene	50		U
79-34-5	*	1,1,2,2-Tetrachloroethane	50		U
108-90-7	*	Chlorobenzene	50		U
541-73-1	*	1,3-Dichlorobenzene	100		U
95-50-1	*	1,2-Dichlorobenzene	100		U
106-46-7	*	1,4-Dichlorobenzene	100		U
		% Surrogate Recovery		61	

* A 601/8010 approved compound (Federal Register, 10/26/84)
\# A compound added by Anametrix, Inc.

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.

Form 1-1.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 602/8020

Sample I.D. : U-2
Matrix : WATER
Date sampled : 8-27-87
Date analyzed : 9-8-87
Dilution : 1:20

Anametrix I.D. : 8708113
Analyst : MG
Supervisor : JnS
Date released : 9-9-87

CAS #	Compound Name	Det. Limit (ug/l)	(ug/l)	Q
71-43-2	Benzene	10	20	+
108-88-3	Toluene	10	250	+
108-90-7	Chlorobenzene	10		U
100-41-4	Ethylbenzene	10		U
	Xylenes	20	50	+
95-50-1	1,2-Dichlorobenzene	20		U
541-73-1	1,3-Dichlorobenzene	20		U
106-46-7	1,4-Dichlorobenzene	20		U
78-93-3	Methyl ethyl ketone	200		U
	% Surrogate Recovery		82	

For reporting purposes, the following qualifiers (Q) are used:
+ : A value greater than or equal to the method detection limit.
U : The compound was analyzed for but was not detected.

Form 2-1.

ANAMETRIX, INC.
LABORATORY SERVICES
ENVIRONMENTAL • ANALYTICAL CHEMISTRY
2754 AIELLO DRIVE • SAN JOSE, CA 95111 • (408) 629-1132

Document Inventory

Project # 8708113

DOCUMENT CONTROL #	DOCUMENT TYPE
8708113-000001	Initial Method 601 Calibration
2-12	Daily Method 601 Calibration Chromatograms
13	Sample screen
14-16	Sample Chromatograms
17	Sample Chromatogram Method 625

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Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description Water	Detection Limit ppm	Total Hydrocarbons as Paint Thinner ppm
7082427	V-1	1	< 1.0
7082428	V-2	1	< 1.0
7082429	V-3	1	< 1.0
7082430	V-4	1	< 1.0
7082431	V-5	1	< 1.0
7082432	V-6	1	< 1.0
7082433	V-7	1	< 1.0
7082434	I-1	1	< 1.0

NOTE: Analysis was performed using EPA methods 3510 and 8015.

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for Arthur G. Burton
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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082427	Water, V-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082427	Water, V-1

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082427	Water, V-1

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	< 0.5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082428	Water, V-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	< 10,000
Acrylonitrile	< 10,000
Benzene	< 50
Bromomethane	< 50
Bromodichloromethane	< 50
Bromoform	< 50
Carbon tetrachloride	< 50
Chlorobenzene	< 50
Chloroethane	< 50
2-Chloroethylvinyl ether	< 50
Chloroform	< 50
Chloromethane	< 50
Dibromochloromethane	< 50
1,1-Dichloroethane	630
1,2-Dichloroethane	< 50
1,1-Dichloroethene	< 50
trans-1,2-Dichloroethene	< 50
1,2-Dichloropropane	< 50
1,3-Dichloropropene	< 50
Ethylbenzene	< 50
Methylene chloride	270
1,1,2,2-Tetrachloroethane	< 50
Tetrachloroethene	< 50
1,1,1-Trichloroethane	270
1,1,2-Trichloroethane	< 50
Trichloroethene	< 50
Toluene	< 50
Vinyl chloride	< 50
1,2-Dichlorobenzene	< 50
1,3-Dichlorobenzene	< 50
1,4-Dichlorobenzene	< 50

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082428	Water, V-2

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082428	Water, V-2

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	<50
Xylene, ppb	<50

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Date Sampled:	08/28/87
Date Received:	08/31/87
Date Extracted:	09/11/87
Date Reported:	09/16/87
Project No. JCO-104H	

ple Number

7082437

Sample Description

Water, V-2 Duplicate

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

rolein	< 10,000	trans-1,2-Dichloroethene	< 50
rylonitrile	< 10,000	1,2-Dichloropropane	< 50
nzene	< 50	1,3-Dichloropropene	< 50
omomethane	< 50	Ethylbenzene	< 50
omodichloromethane	< 50	Methylene chloride	200
omoform	< 50	1,1,2,2-Tetrachloroethane	< 50
rbon tetrachloride	< 50	Tetrachloroethene	< 50
lorobenzene	< 50	1,1,1-Trichloroethane	250
loroethane	< 50	1,1,2-Trichloroethane	< 50
-Chloroethylvinyl ether	< 50	Trichloroethene	< 50
loroform	< 50	Toluene	< 50
loromethane	< 50	Vinyl chloride	< 50
romochloromethane	< 50	1,2-Dichlorobenzene	< 50
1-Dichloroethane	570	1,3-Dichlorobenzene	< 50
2-Dichloroethane	< 50	1,4-Dichlorobenzene	< 50
1-Dichloroethene	< 20		

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number
7082437

Sample Description
Water, V-2, Duplicate

ANALYSIS

Methyl Ethyl Ketone, ppm	< 50
Xylenes	< 50

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082429	Water, V-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	12
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	6.3
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	1.8
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	15	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	1.0	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	1.3		

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082429	Water, V-3

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082429	Water, V-3

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	8.0

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number: 7082430

Sample Description: Water, V-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	< 10,000	trans-1,2-Dichloroethene	< 5.0
Acrylonitrile	< 10,000	1,2-Dichloropropane	< 5.0
Benzene	< 5.0	1,3-Dichloropropene	< 5.0
Bromomethane	< 5.0	Ethylbenzene	< 5.0
Bromodichloromethane	< 5.0	Methylene chloride	< 5.0
Bromoform	< 5.0	1,1,2,2-Tetrachloroethane	< 5.0
Carbon tetrachloride	< 5.0	Tetrachloroethene	< 5.0
Chlorobenzene	< 5.0	1,1,1-Trichloroethane	60
Chloroethane	< 5.0	1,1,2-Trichloroethane	< 5.0
2-Chloroethylvinyl ether	< 5.0	Trichloroethene	< 5.0
Chloroform	< 5.0	Toluene	< 5.0
Chloromethane	< 5.0	Vinyl chloride	< 5.0
Dibromochloromethane	< 5.0	1,2-Dichlorobenzene	< 5.0
1,1-Dichloroethane	400	1,3-Dichlorobenzene	< 5.0
1,2-Dichloroethane	< 5.0	1,4-Dichlorobenzene	< 5.0
1,1-Dichloroethene	36		

SEQUOIA ANALYTICAL LABORATORY

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082430	Water, V-4

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082430	Water, V-4

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 5
Xylene, ppb	< 5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082431	Water, V-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082431	Water, V-5

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082431	Water, V-5

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	< 0.5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number: 7082432

Sample Description: Water, V-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	2.5
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082432	Water, V-6

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082432	Water, V-6

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	< 0.5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082433	Water, V-7

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	16
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	24	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	1.9		

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082433	Water, V-7

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082433	Water, V-7

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	< 0.5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082434	Water, I-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	1.9
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	2.3	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

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Arthur G. Burton
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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Received: 08/31/87
Date Extracted: 09/04/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082434	Water, I-1

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 1
2-Chlorophenol	< 1
2,4-Dichlorophenol	< 1
2,4-Dimethylphenol	< 1
2,4-Dinitrophenol	< 1
2-Methyl-4,6-dinitrophenol	< 1
2-Nitrophenol	< 1
4-Nitrophenol	< 1
Pentachlorophenol	< 1
Phenol	< 1
2,4,6-Trichlorophenol	< 1

NOTE: Method 604 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082434	Water, I-1

ANALYSIS

Methanol, ppm	< 1
Ethanol, ppm	< 1
Isopropyl Alcohol, ppm	< 1
Acetone, ppm	< 1
Methyl Ethyl Ketone, ppb	< 0.5
Xylene, ppb	< 0.5

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/09/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082435	Water, I-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	6.8
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	14	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	7.1		

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Arthur G. Burton
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NOTE: Method 624 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/09/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082435	Water, I-2

- Open Scan -
NON-PRIORITY POLLUTANTS
VOLATILE ORGANIC COMPOUNDS
results in ppb

No additional peaks > 10 ppb were detected for identification by NBS spectral library.

SEQUOIA ANALYTICAL LABORATORY

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Arthur G. Burton
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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/09/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number
7082436

Sample Description
Water, I-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

SEQUOIA ANALYTICAL LABORATORY

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Arthur G. Burton
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NOTE: Method 624 of the EPA was used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/09/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082436	Water, I-3

- Open Scan -
NON-PRIORITY POLLUTANTS
VOLATILE ORGANIC COMPOUNDS
results in ppb

No additional peaks > 10 ppb were detected for identification by NBS spectral library.

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number
7082438

Sample Description
Water, Field Blank

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100
Acrylonitrile	<100
Benzene	< 0.5
Bromomethane	< 0.5
Bromodichloromethane	< 0.5
Bromoform	< 0.5
Carbon tetrachloride	< 0.5
Chlorobenzene	< 0.5
Chloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5
Chloroform	< 0.5
Chloromethane	< 0.5
Dibromochloromethane	< 0.5
1,1-Dichloroethane	< 0.5
1,2-Dichloroethane	< 0.5
1,1-Dichloroethene	< 0.2
trans-1,2-Dichloroethene	< 0.5
1,2-Dichloropropane	< 0.5
1,3-Dichloropropene	< 0.5
Ethylbenzene	< 0.5
Methylene chloride	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5
Tetrachloroethene	< 0.5
1,1,1-Trichloroethane	< 0.5
1,1,2-Trichloroethane	< 0.5
Trichloroethene	< 0.5
Toluene	< 0.5
Vinyl chloride	< 0.5
1,2-Dichlorobenzene	< 0.5
1,3-Dichlorobenzene	< 0.5
1,4-Dichlorobenzene	< 0.5

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082438	Water, Field Blank

ANALYSIS

Methyl Ethyl Ketone, ppm	< 0.5
Xylenes	< 0.5

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Extracted: 09/11/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082439	Water, Method Blank

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 0.5
Acrylonitrile	<100	1,2-Dichloropropane	< 0.5
Benzene	< 0.5	1,3-Dichloropropene	< 0.5
Bromomethane	< 0.5	Ethylbenzene	< 0.5
Bromodichloromethane	< 0.5	Methylene chloride	< 0.5
Bromoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Carbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
Chlorobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
Chloroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
Chloroform	< 0.5	Toluene	< 0.5
Chloromethane	< 0.5	Vinyl chloride	< 0.5
Dibromochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
1,1-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
1,1-Dichloroethene	< 0.2		

SEQUOIA ANALYTICAL LABORATORY

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Arthur G. Burton
Laboratory Director

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 08/28/87
Date Received: 08/31/87
Date Reported: 09/16/87
Project No. JCO-104H

Sample Number	Sample Description
7082439	Water, Method Blank

ANALYSIS

Methyl Ethyl Ketone, ppm	< 0.5
Xylenes	< 0.5

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description Water,	Detection Limit ppm	Total Hydrocarbons as Paint Thinner ppm
7092015	V-1	1	< 1.0
7092016	V-2	1	< 1.0
7092017	V-3	1	< 1.0
7092018	V-4	1	< 1.0
7092019	V-5	1	< 1.0
7092020	V-6	1	< 1.0
7092021	V-7	1	< 1.0
7092022	I-1	1	< 1.0
7092023	I-2	1	< 1.0
7092024	I-3	1	< 1.0

NOTE: Analysis was performed using EPA methods 3550 and 8015.

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/09/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092015	Water, V-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS

results in ppb

Compound	Result
Acrolein	<100
Acrylonitrile	<100
Benzene	< 0.5
Bromomethane	< 0.5
Bromodichloromethane	< 0.5
Bromoform	< 0.5
Carbon tetrachloride	< 0.5
Chlorobenzene	< 0.5
Chloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5
Chloroform	< 0.5
Chloromethane	< 0.5
Dibromochloromethane	< 0.5
1,1-Dichloroethane	3.9
1,2-Dichloroethane	< 0.5
1,1-Dichloroethene	0.58
trans-1,2-Dichloroethene	1.4
1,2-Dichloropropane	< 0.5
1,3-Dichloropropene	< 0.5
Ethylbenzene	< 0.5
Methylene chloride	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5
Tetrachloroethene	< 0.5
1,1,1-Trichloroethane	< 0.5
1,1,2-Trichloroethane	< 0.5
Trichloroethene	< 0.5
Toluene	< 0.5
Vinyl chloride	< 0.5
1,2-Dichlorobenzene	< 0.5
1,3-Dichlorobenzene	< 0.5
1,4-Dichlorobenzene	< 0.5

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/08/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092015	Water, V-1

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

SEQUOIA ANALYTICAL LABORATORY

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NOTE: Method 625 of the EPA was used for this analysis.

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092015	Water, V-1

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Attn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/13/87
Date Reported:
Project No. JCO-104H

Sample Number	Sample Description
7092016	Water, V-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Acrolein	<100	trans-1,2-Dichloroethene	< 50
Acrylonitrile	<100	1,2-Dichloropropane	< 50
Benzene	< 50	1,3-Dichloropropene	< 50
Bromomethane	< 50	Ethylbenzene	< 50
Bromodichloromethane	< 50	Methylene chloride	220
Bromoform	< 50	1,1,2,2-Tetrachloroethane	< 50
Carbon tetrachloride	< 50	Tetrachloroethene	< 50
Chlorobenzene	< 50	1,1,1-Trichloroethane	630
Chloroethane	< 50	1,1,2-Trichloroethane	< 50
2-Chloroethylvinyl ether	< 50	Trichloroethene	< 50
Chloroform	< 50	Toluene	< 50
Chloromethane	< 50	Vinyl chloride	< 50
Dibromochloromethane	< 50	1,2-Dichlorobenzene	< 50
1,1-Dichloroethane	490	1,3-Dichlorobenzene	< 50
1,2-Dichloroethane	< 50	1,4-Dichlorobenzene	< 50
1,1-Dichloroethene	< 50		

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NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Project No. JCO-104H

Sample Number	Sample Description
7092016	Water, V-2

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

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Project No. JCO-104H

Sample Number	Sample Description
7092016	Water, V-2

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	26
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	950

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Project No. JCO-104H

...mple Number	Sample Description
7092017	Water, V-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

...rolein	<100		trans-1,2-Dichloroethene	9.1
...rylonitrile	<100		1,2-Dichloropropane	< 0.5
...nzene	< 0.5		1,3-Dichloropropene	< 0.5
...romethane	< 0.5		Ethylbenzene	< 0.5
...odichloromethane	< 0.5		Methylene chloride	12
...moform	< 0.5		1,1,2,2-Tetrachloroethane	< 0.5
...rbon tetrachloride	< 0.5		Tetrachloroethene	< 0.5
...lorobenzene	< 0.5		1,1,1-Trichloroethane	1.1
...croethane	< 0.5		1,1,2-Trichloroethane	< 0.5
...Chloroethylvinyl ether	< 0.5		Trichloroethene	< 0.5
...loroform	< 0.5		Toluene	< 0.5
...cromethane	< 0.5		Vinyl chloride	0.68
...romochloromethane	< 0.5		1,2-Dichlorobenzene	< 0.5
...-Dichloroethane	6.6		1,3-Dichlorobenzene	< 0.5
...-Dichloroethane	< 0.5		1,4-Dichlorobenzene	< 0.5
...-Dichloroethene	0.76			

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Project No. JCO-104H

Sample Number	Sample Description
7092017	Water, V-3

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

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Project No. JCO-104H

Sample Number	Sample Description
7092017	Water, V-3

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Project No. JCO-104H

Sample Number	Sample Description
7092018	Water, V-4

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

Compound	Result	Compound	Result
Acrolein	<100	trans-1,2-Dichloroethene	< 5
Acrylonitrile	<100	1,2-Dichloropropane	< 5
Benzene	< 5	1,3-Dichloropropene	< 5
Bromomethane	< 5	Ethylbenzene	< 5
Bromodichloromethane	< 5	Methylene chloride	< 5
Bromoform	< 5	1,1,2,2-Tetrachloroethane	< 5
Carbon tetrachloride	< 5	Tetrachloroethene	< 5
Chlorobenzene	< 5	1,1,1-Trichloroethane	30
Chloroethane	39	1,1,2-Trichloroethane	< 5
2-Chloroethylvinyl ether	< 5	Trichloroethene	< 5
Chloroform	< 5	Toluene	< 5
Chloromethane	< 5	Vinyl chloride	< 5
Dibromochloromethane	< 5	1,2-Dichlorobenzene	< 5
1,1-Dichloroethane	310	1,3-Dichlorobenzene	< 5
1,2-Dichloroethane	< 5	1,4-Dichlorobenzene	< 5
1,1-Dichloroethene	14		

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Project No. JCO-104H

Sample Number	Sample Description
7092018	Water, V-4

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	<	10
2-Chlorophenol	<	10
2,4-Dichlorophenol	<	10
2,4-Dimethylphenol	<	10
2,4-Dinitrophenol	<	10
2-Methyl-4,6-dinitrophenol	<	10
2-Nitrophenol	<	10
4-Nitrophenol	<	10
Pentachlorophenol	<	10
Phenol	<	10
2,4,6-Trichlorophenol	<	10

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Project No. JCO-104H

Sample Number	Sample Description
7092018	Water, V-4

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Project No. JCO-104H

ple Number	Sample Description
7092019	Water, V-5

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

rolein	<100	trans-1,2-Dichloroethene	< 0.5
rylonitrile	<100	1,2-Dichloropropane	< 0.5
nzene	< 0.5	1,3-Dichloropropene	< 0.5
omomethane	< 0.5	Ethylbenzene	< 0.5
omodichloromethane	< 0.5	Methylene chloride	< 0.5
omoform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
rbon tetrachloride	< 0.5	Tetrachloroethene	< 0.5
lorobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
loroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
hloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
loroform	< 0.5	Toluene	< 0.5
oromethane	< 0.5	Vinyl chloride	< 0.5
romochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
-Dichloroethene	< 0.2		

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Project No. JCO-104H

Sample Number	Sample Description
7092019	Water, V-5

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	<	10
2-Chlorophenol	<	10
2,4-Dichlorophenol	<	10
2,4-Dimethylphenol	<	10
2,4-Dinitrophenol	<	10
2-Methyl-4,6-dinitrophenol	<	10
2-Nitrophenol	<	10
4-Nitrophenol	<	10
Pentachlorophenol	<	10
Phenol	<	10
2,4,6-Trichlorophenol	<	10

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Project No. JCO-104H

Sample Number	Sample Description
7092019	Water, V-5

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Project No. JCO-104H

...ple Number
...92020

Sample Description
Water, V-6

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

...olein	<100	trans-1,2-Dichloroethene	< 0.5
...ylonitrile	<100	1,2-Dichloropropane	< 0.5
...zene	1.9	1,3-Dichloropropene	< 0.5
...omethane	< 0.5	Ethylbenzene	< 0.5
...odichloromethane	< 0.5	Methylene chloride	< 0.5
...oform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
...on tetrachloride	< 0.5	Tetrachloroethene	< 0.5
...orobenzene	< 0.5	1,1,1-Trichloroethane	4.5
...oroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
...hloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
...oroform	< 0.5	Toluene	< 0.5
...romethane	< 0.5	Vinyl chloride	< 0.5
...romochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
...-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
...-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
...-Dichloroethene	< 0.2		

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Sample Number	Sample Description
7092020	Water, V-6

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

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Project No. JCO-104H

Sample Number	Sample Description
7092020	Water, V-6

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Project No. JCO-104H

...ple Number	Sample Description
7092021	Water, V-7

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

...rolein		<100
...rylonitrile		<100
...zene	<	0.5
...omethane	<	0.5
...odichloromethane	<	0.5
...moform	<	0.5
...on tetrachloride	<	0.5
...lorobenzene	<	0.5
...loroethane	<	0.5
...hloroethylvinyl ether	<	0.5
...oroform	<	0.5
...oromethane	<	0.5
...romochloromethane	<	0.5
...-Dichloroethane		19
...-Dichloroethane	<	0.5
...-Dichloroethene		2.4
trans-1,2-Dichloroethene	<	0.5
1,2-Dichloropropane	<	0.5
1,3-Dichloropropene	<	0.5
Ethylbenzene	<	0.5
Methylene chloride	<	0.5
1,1,2,2-Tetrachloroethane	<	0.5
Tetrachloroethene	<	0.5
1,1,1-Trichloroethane		23
1,1,2-Trichloroethane	<	0.5
Trichloroethene	<	0.5
Toluene	<	0.5
Vinyl chloride	<	0.5
1,2-Dichlorobenzene	<	0.5
1,3-Dichlorobenzene	<	0.5
1,4-Dichlorobenzene	<	0.5

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Date Reported: 10/13/87
Project No. JCO-104H

Sample Number
7092021

Sample Description
Water, V-7

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

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Project No. JCO-104H

Sample Number		Sample Description
7092021		Water, V-7

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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Project No. JCO-104H

ple Number
7092022

Sample Description
Water I-1

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

rolein	<100	trans-1,2-Dichloroethene	< 0.5
rylonitrile	<100	1,2-Dichloropropane	< 0.5
nzene	< 0.5	1,3-Dichloropropene	< 0.5
omomethane	< 0.5	Ethylbenzene	< 0.5
modichloromethane	< 0.5	Methylene chloride	< 0.5
oform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
on tetrachloride	< 0.5	Tetrachloroethene	< 0.5
orobenzene	< 0.5	1,1,1-Trichloroethane	2.0
oroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
loroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
oroform	< 0.5	Toluene	< 0.5
oromethane	< 0.5	Vinyl chloride	< 0.5
omochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
-Dichloroethane	3.0	1,3-Dichlorobenzene	< 0.5
-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
-Dichloroethene	< 0.2		

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Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092022	Water I-1

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

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Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092022	Water, I-1

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

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..ple Number
7092023

Sample Description
Water, I-2

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

..rolein	<100		trans-1,2-Dichloroethene	<	0.5
..rylonitrile	<100		1,2-Dichloropropane	<	0.5
..zene	<	0.5	1,3-Dichloropropene	<	0.5
..omethane	<	0.5	Ethylbenzene	<	0.5
..odichloromethane	<	0.5	Methylene chloride	<	0.5
..oform	<	0.5	1,1,2,2-Tetrachloroethane	<	0.5
..on tetrachloride	<	0.5	Tetrachloroethene	<	0.5
..robenzene	<	0.5	1,1,1-Trichloroethane	<	0.5
..oroethane	<	0.5	1,1,2-Trichloroethane	<	0.5
..loroethylvinyl ether	<	0.5	Trichloroethene	<	0.5
..oroform	<	0.5	Toluene	<	0.5
..romethane	<	0.5	Vinyl chloride	<	0.5
..romochloromethane	<	0.5	1,2-Dichlorobenzene	<	0.5
..-Dichloroethane	<	0.5	1,3-Dichlorobenzene	<	0.5
..-Dichloroethane	<	0.5	1,4-Dichlorobenzene	<	0.5
..-Dichloroethene	<	0.2			

..UOIA ANALYTICAL LABORATORY

Scot Cocanour

..ur G. Burton
..oratory Director

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/09/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092023	Water, I-2

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

NOTE: Method 625 of the EPA was used for this analysis.

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Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092023	Water, I-2

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

SEQUOIA ANALYTICAL LABORATORY

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Arthur G. Burton
Laboratory Director

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lo Alto, CA 94303
tn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/09/87
Date Reported: 10/13/87
Project No. JCO-104H

ple Number: 092024

Sample Description: Water, I-3

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

crolein	<100	trans-1,2-Dichloroethene	< 0.5
rylonitrile	<100	1,2-Dichloropropane	< 0.5
nzene	< 0.5	1,3-Dichloropropene	< 0.5
omethane	< 0.5	Ethylbenzene	< 0.5
odichloromethane	< 0.5	Methylene chloride	< 0.5
oform	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
on tetrachloride	< 0.5	Tetrachloroethene	< 0.5
orobenzene	< 0.5	1,1,1-Trichloroethane	< 0.5
oroethane	< 0.5	1,1,2-Trichloroethane	< 0.5
hloroethylvinyl ether	< 0.5	Trichloroethene	< 0.5
oroform	< 0.5	Toluene	< 0.5
romethane	< 0.5	Vinyl chloride	< 0.5
omochloromethane	< 0.5	1,2-Dichlorobenzene	< 0.5
-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
-Dichloroethane	< 0.5	1,4-Dichlorobenzene	< 0.5
-Dichloroethene	< 0.2		

OIA ANALYTICAL LABORATORY

Scot Cocannon

ur G. Burton
ratory Director

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/09/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092024	Water, I-3

PHENOLIC COMPOUNDS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 10
2-Methyl-4,6-dinitrophenol	< 10
2-Nitrophenol	< 10
4-Nitrophenol	< 10
Pentachlorophenol	< 10
Phenol	20
2,4,6-Trichlorophenol	< 10

SEQUOIA ANALYTICAL LABORATORY

Arthur G. Burton
Laboratory Director

NOTE: Method 625 of the EPA was used for this analysis.

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Date Sampled: 09/25/87
Date Received: 09/28/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092024	Water, I-3

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5
Methanol	<50
Ethanol	<50
Isopropanol	<50
Acetone	<50

SEQUOIA ANALYTICAL LABORATORY

Scott Cocanour

Arthur G. Burton
Laboratory Director

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...ler Associates
...23 Corporation Way
...lo Alto, CA 94303
...tn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Extracted: 10/09/87
Date Reported: 10/13/87
Project No. JCO-104H

...ple Number

7092025

Sample Description

Water, V-4, Duplicate

PRIORITY POLLUTANTS

VOLATILE ORGANIC COMPOUNDS
results in ppb

...rolein	<100		trans-1,2-Dichloroethene	<	5
...rylonitrile	<100		1,2-Dichloropropane	<	5
...zene	<	5	1,3-Dichloropropene	<	5
...omomethane	<	5	Ethylbenzene	<	5
...odichloromethane	<	5	Methylene chloride	<	5
...moform	<	5	1,1,2,2-Tetrachloroethane	<	5
...rbon tetrachloride	<	5	Tetrachloroethene	<	5
...lorobenzene	<	5	1,1,1-Trichloroethane		31
...loroethane	63		1,1,2-Trichloroethane	<	5
...hloroethylvinyl ether	<	5	Trichloroethene	<	5
...oroform	<	5	Toluene	<	5
...loromethane	<	5	Vinyl chloride	<	5
...romochloromethane	<	5	1,2-Dichlorobenzene	<	5
...-Dichloroethane	300		1,3-Dichlorobenzene	<	5
...-Dichloroethane	<	5	1,4-Dichlorobenzene	<	5
...-Dichloroethene	16				

...UOIA ANALYTICAL LABORATORY

...hur G. Burton
...oratory Director

NOTE: Methods 601 & 602 of the EPA were used for this analysis.

SEQUOIA Analytical Laboratory
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Attn: Bob Breynaert

Date Sampled: 09/25/87
Date Received: 09/28/87
Date Reported: 10/13/87
Project No. JCO-104H

Sample Number	Sample Description
7092025	Water, V-4, Duplicate

ANALYSIS
results in ppb

Methyl-Ethyl Ketone	< 0.5
Xylenes	< 0.5

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

ANRESCO INCORPORATED
ANALYSIS RESEARCH

1370 - VAN DYKE AVENUE
SAN FRANCISCO, CALIFORNIA 94124
(415) 822-1100

07 October 1987

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303

File No. 987125 A-E

Attn: Mr. Bob Breynaert

Re: Two water samples and three water blanks as labeled below for EPA methods 601, 602 plus Methyl Ethyl Keytone and Xylene.
A) V-2; B) V-4; C) Field Blank (8:00);
D) Field Blank (8:15); E) Method Blank

Received: 9-28-87

ANALYSIS

ANRESCO #	SAMPLE #	RESULTS		
		EPA-601		
987125A	V-2	Chloroethane	26	ppb
		Methylene Chloride	4600	ppb
		1,1 Dichloroethene	76	ppb
		1,1 Dichloroethane	700	ppb
		1,1,1 Trichloroethane	500	ppb
		Chlorobenzene	37	ppb
		EPA-602		
	V-2	Benzene	7	ppb
		Toluene	200	ppb
		Chlorobenzene	37	ppb
		Methyle Ethyl Keytone	27	ppb
		Xylene	44	ppb
		EPA-601		
987125B	V-4	Chloroethane	59	ppb
		Methylene Chloride	3	ppb
		1,1 Dichloroethene	28	ppb
		1,1 Dichloroethane	1000	ppb
		1,1,1 Trichloroethane	20	ppb
		Chlorobenzene	8	ppb
		1,2 Dichloroethane	8	ppb
		EPA-602		
		Toluene	17	ppb
		Chlorobenzene	8	ppb

Wahler Associates
Ø6 October 1987
page 2.

File No. 987125 A-C

ANRESCO #	SAMPLE #	RESULTS	
987125C		EPA-6Ø1	None Detected
		EPA-6Ø2	None Detected
		MEK, Xylene	None Detected
987125D		Same as 987175C	
987125E		Same as 987175C	

Limit of Detection on all compounds listed in methods 6Ø1 & 6Ø2 but not detected in these samples is estimated to be 1Ø ppb or less.

Spike Recoveries:

Sample V-4 was spiked at a level of 1Ø ppb with methylene chloride and toluene.

Recovery $MeCl_2$ = 9Ø%
Recovery Toluene = 75%

Samples were not filtered.

Reported by,

ANRESCO, INC.

Mary Mesics
Mary Mesics
Senior Chemist

Eric Tam
Eric Tam
Senior Chemist

MM/ET:sc

SEQUOIA Analytical Laboratory
2549 Middlefield Road
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Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88
Project: #JCO-104H

Sample Number	Sample Description
8030514	Water, V-8

PRIORITY POLLUTANTS

PURGEABLES BY GC/MS
results in ppb

Benzene....................	< 2
Bromomethane...............	< 2
Bromodichloromethane.......	< 2
Bromoform..................	< 2
Carbon tetrachloride.......	< 2
Chlorobenzene..............	< 2
Chloroethane...............	< 2
2-Chloroethylvinyl ether...	<10
Chloroform.................	<10
Chloromethane..............	< 2
Dibromochloromethane.......	< 2
1,1-Dichloroethane.........	< 2
1,2-Dichloroethane.........	< 2
1,1-Dichloroethene.........	< 2
trans-1,2-Dichloroethene...	< 2
1,2-Dichloropropane.........	< 2
1,3-Dichloropropane.........	< 2
Ethylbenzene................	< 2
Methylene chloride..........	<10
1,1,2,2-Tetrachloroethane...	< 2
Tetrachloroethene...........	< 2
1,1,1-Trichloroethane.......	3.5
1,1,2-Trichloroethane.......	< 2
Trichloroethene.............	< 2
Toluene.....................	< 2
Vinyl chloride..............	< 2

Method of Analysis: EPA 624

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030514	Water, V-8

- Open Scan -
NON-PRIORITY POLLUTANTS
PURGEABLES BY GC/MS
results in ppb

2-Propanone	3.0

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030514	Water, V-8

ANALYSIS
results in ppb

Methanol	< 10
Ethanol	< 10
Acetone	< 10
Isopropanol	< 10

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Extracted: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030514	Water, V-8

PRIORITY POLLUTANTS

PHENOLS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 15
2-Methyl-4,6-dinitrophenol	< 15
2-Nitrophenol	< 10
4-Nitrophenol	< 15
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

Method of Analysis: EPA 604

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description Water,	Detection Limit ppb	(Paint Thinner) High Boiling Point Hydrocarbons ppb
8030514	V-8	50	< 50

Method of Analysis: EPA 3510/8015

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

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Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88
Project: #JCO-104H

Sample Number	Sample Description
8030514	Water, V-8

ANALYSIS

Turbidity, NTU	47

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030515	Water, V-9

PRIORITY POLLUTANTS

PURGEABLES BY GC/MS
results in ppb

Benzene....................	< 2	1,2-Dichloropropane.........	< 2
Bromomethane...............	< 2	1,3-Dichloropropane.........	< 2
Bromodichloromethane.......	< 2	Ethylbenzene................	< 2
Bromoform..................	< 2	Methylene chloride..........	<10
Carbon tetrachloride.......	< 2	1,1,2,2-Tetrachloroethane...	< 2
Chlorobenzene..............	< 2	Tetrachloroethene...........	< 2
Chloroethane...............	< 2	1,1,1-Trichloroethane.......	< 2
2-Chloroethylvinyl ether...	<10	1,1,2-Trichloroethane.......	< 2
Chloroform.................	<10	Trichloroethene.............	< 2
Chloromethane..............	< 2	Toluene.....................	< 2
Dibromochloromethane.......	< 2	Vinyl chloride..............	< 2
1,1-Dichloroethane.........	3.6		
1,2-Dichloroethane.........	< 2		
1,1-Dichloroethene.........	< 2		
trans-1,2-Dichloroethene...	< 2		

Method of Analysis: EPA 624

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030515	Water, V-9

- Open Scan -
NON-PRIORITY POLLUTANTS
PURGEABLES BY GC/MS
results in ppb

2-Propanone	5.1

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030515	Water, V-9

ANALYSIS
results in ppb

Methanol	< 10
Ethanol	< 10
Acetone	< 10
Isopropanol	< 10

SEQUOIA ANALYTICAL LABORATORY

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Date Sampled: 03/08/88
Date Received: 03/08/88
Date Extracted: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030515	Water, V-9

PRIORITY POLLUTANTS

PHENOLS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 15
2-Methyl-4,6-dinitrophenol	< 15
2-Nitrophenol	< 10
4-Nitrophenol	< 15
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

Method of Analysis: EPA 604

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Detection Limit	(Paint Thinner) High Boiling Point Hydrocarbons
	Water,	ppb	ppb
8030515	V-9	50	< 50

Method of Analysis: EPA 3510/8015

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/08/88
Date Received: 03/08/88
Date Reported: 03/14/88
Project: #JCO-104H

Sample Number	Sample Description
8030515	Water, V-9

ANALYSIS

Turbidity, NTU	15

SEQUOIA ANALYTICAL LABORATORY

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Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88
Project: #JCO-104H

Sample Number	Sample Description
8030634	Water, V-10

PRIORITY POLLUTANTS

PURGEABLES BY GC/MS
results in ppb

Benzene	< 2
Bromomethane	< 2
Bromodichloromethane	< 2
Bromoform	< 2
Carbon tetrachloride	< 2
Chlorobenzene	< 2
Chloroethane	< 2
2-Chloroethylvinyl ether	<10
Chloroform	<10
Chloromethane	< 2
Dibromochloromethane	< 2
1,1-Dichloroethane	< 2
1,2-Dichloroethane	< 2
1,1-Dichloroethene	< 2
trans-1,2-Dichloroethene	< 2
1,2-Dichloropropane	< 2
1,3-Dichloropropane	< 2
Ethylbenzene	< 2
Methylene chloride	<10
1,1,2,2-Tetrachloroethane	< 2
Tetrachloroethene	< 2
1,1,1-Trichloroethane	< 2
1,1,2-Trichloroethane	< 2
Trichloroethene	< 2
Toluene	< 2
Vinyl chloride	< 2

Method of Analysis: EPA 624

SEQUOIA ANALYTICAL LABORATORY

Scot Cocannon

Arthur G. Burton
Laboratory Director

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1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Analyzed: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030634	Water, V-10

- Open Scan -
NON-PRIORITY POLLUTANTS
PURGEABLES BY GC/MS
results in ppb

No additional peaks > 10 ppb were detected for identification by NBS spectral library.

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030634	Water, V-10

ANALYSIS
results in ppb

Methanol	< 10
Ethanol	< 10
Acetone	< 10
Isopropanol	< 10

SEQUOIA ANALYTICAL LABORATORY

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Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Extracted: 03/10/88
Date Reported: 03/14/88

Project: #JCO-104H

Sample Number	Sample Description
8030634	Water, V-10

PRIORITY POLLUTANTS

PHENOLS
results in ppb

4-Chloro-3-methylphenol	< 10
2-Chlorophenol	< 10
2,4-Dichlorophenol	< 10
2,4-Dimethylphenol	< 10
2,4-Dinitrophenol	< 15
2-Methyl-4,6-dinitrophenol	< 15
2-Nitrophenol	< 10
4-Nitrophenol	< 15
Pentachlorophenol	< 10
Phenol	< 10
2,4,6-Trichlorophenol	< 10

Method of Analysis: EPA 604

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Detection Limit ppb	(Paint Thinner) High Boiling Point Hydrocarbons ppb
	Water,		
8030634	V-10	50	< 50

Method of Analysis: EPA 3510/8015

SEQUOIA ANALYTICAL LABORATORY

Scott Cocanour

Arthur G. Burton
Laboratory Director

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2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88
Project: #JCO-104H

Sample Number	Sample Description
8030634	Water, V-10

ANALYSIS

Turbidity, NTU	470

SEQUOIA ANALYTICAL LABORATORY

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2549 Middlefield Road
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Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88

Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description Water,	Detection Limit ppb	(Diesel) High Boiling Point Hydrocarbons ppb
8030634	V-10	50	< 50

Method of Analysis: EPA 3510/8015

SEQUOIA ANALYTICAL LABORATORY

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1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: Janet Schwarz
Date of Analysis: 3/10/88
Method of Analysis: EPA 624
Detection Limit: 2.0
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030515	1,1-DCA	3.6	3.4	2.9

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030635	2-Bromo-1-Chloropropanone	< 2	50	45	90

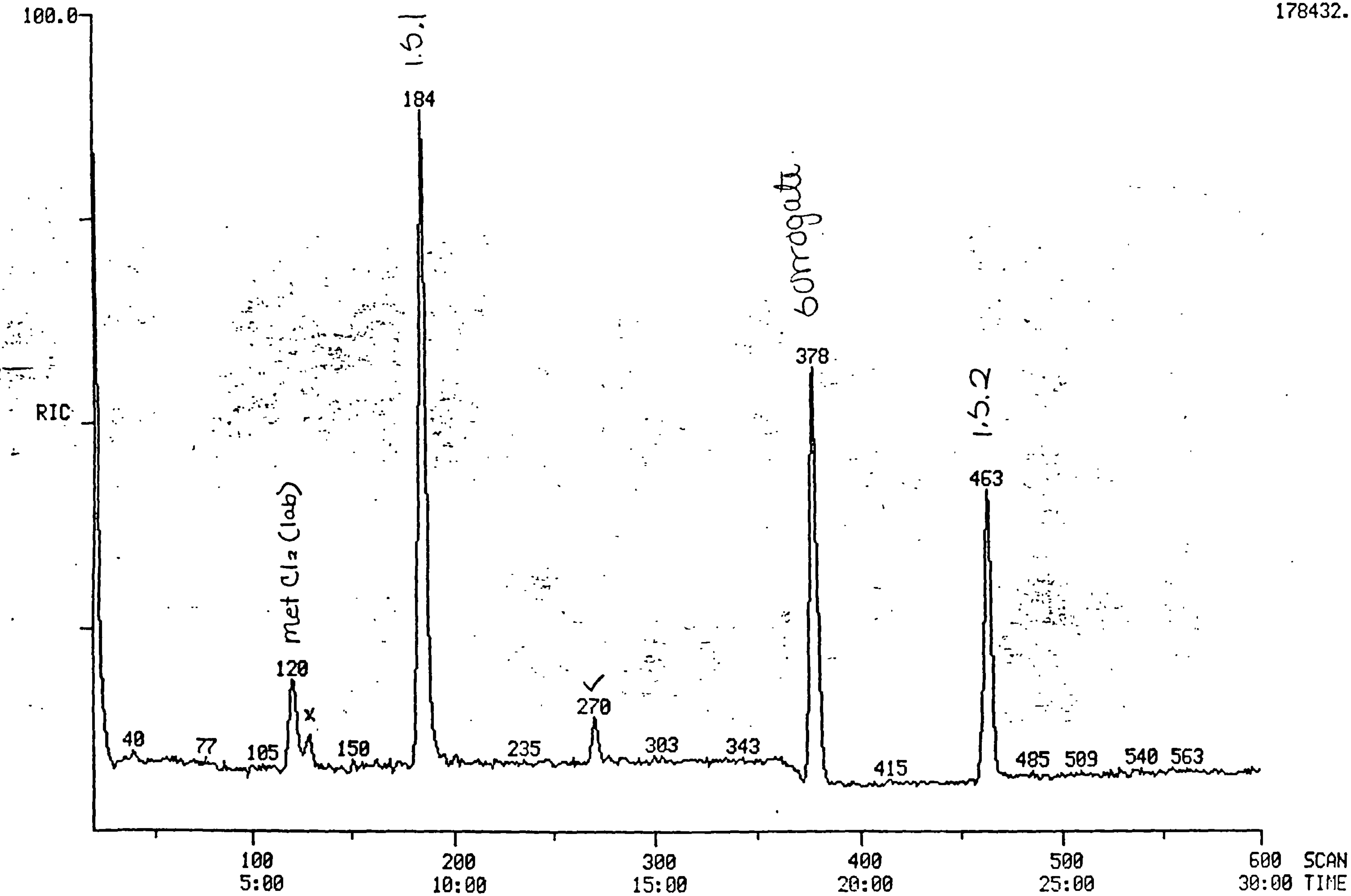
SEQUOIA ANALYTICAL LABORATORY

Scott Cocanour

Arthur G. Burton
Laboratory Director

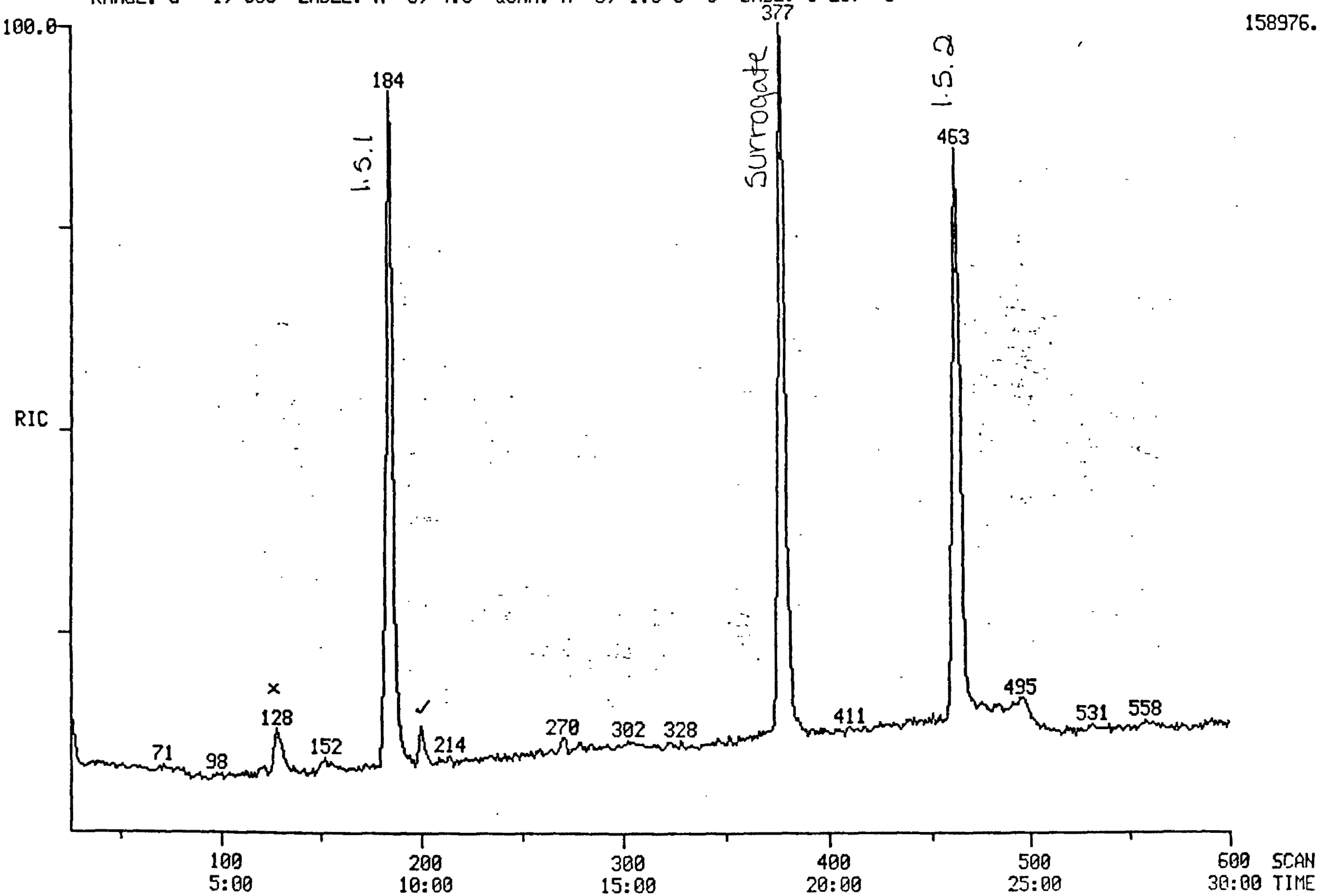
RIC
03/10/88 14:55:00
SAMPLE: JCO V-8 (5ML)
CONDS.: VOA METHOD
RANGE: G 1, 600 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: VOA8030514 #1 SCANS 20 TO 600
CALI: VOA8030514 #2



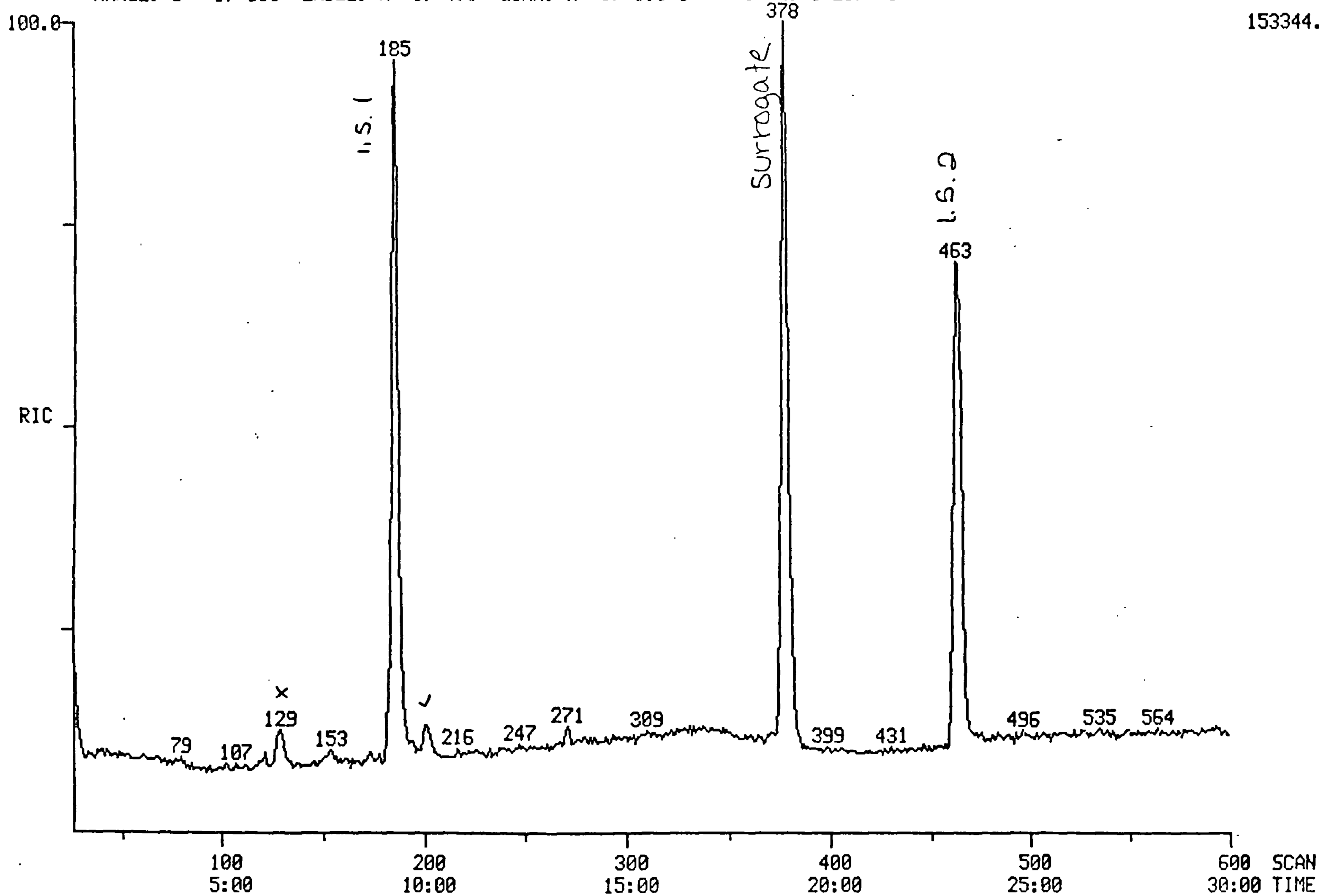
RIC
03/10/88 15:49:00
SAMPLE: JCO V-9 (5ML)
CONDS.: VOA METHOD
RANGE: G 1, 800 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: VOA8030515 #200 SCANS 25 TO 600
CALI: VOA8030515 #2



RIC
03/10/88 16:48:00
SAMPLE: JCO V-9 (5ML)
CONDS.: VOA METHOD
RANGE: G 1, 600 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: VOA8030515A #201 SCANS 25 TO 600
CALI: VOA8030515A #2

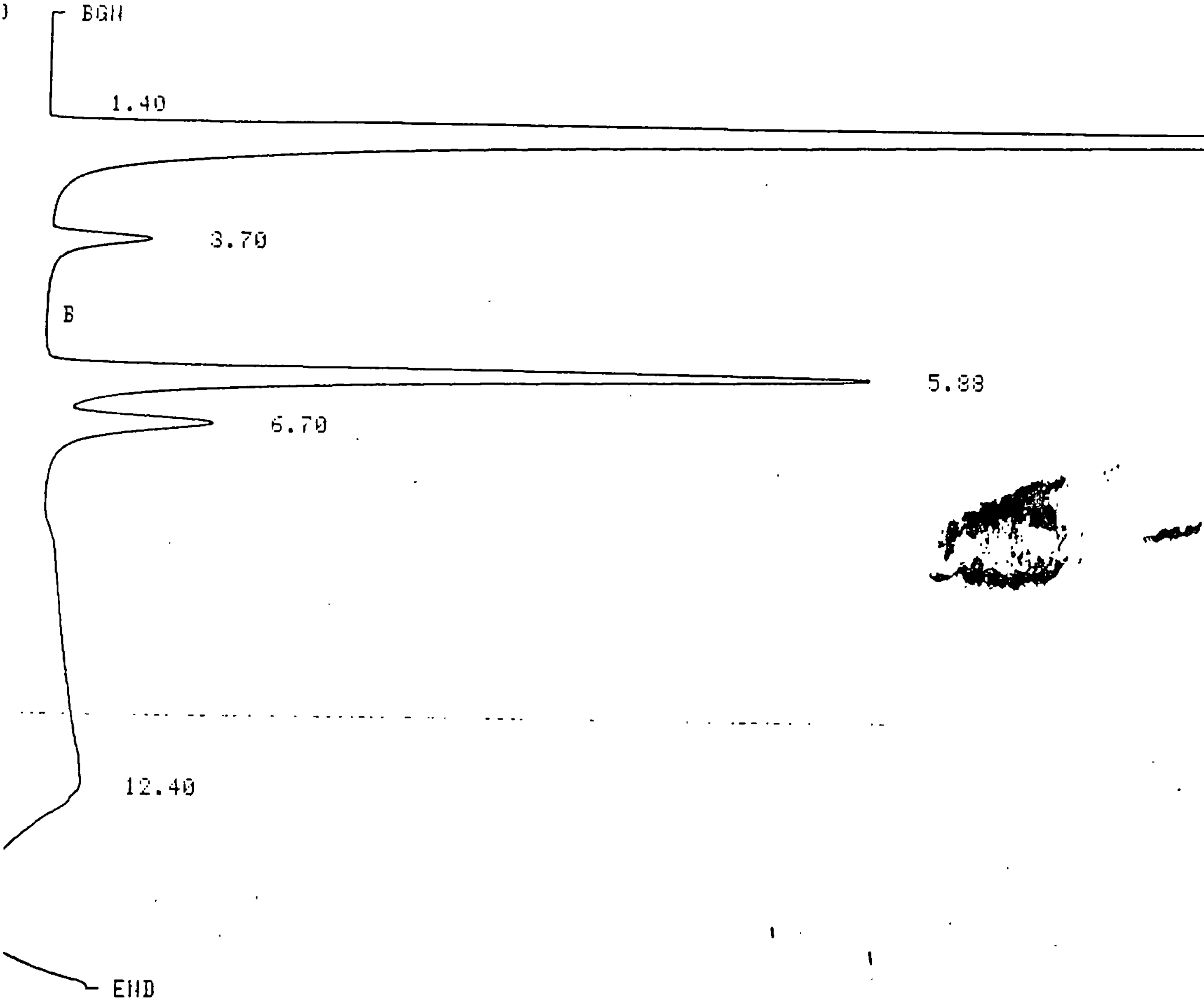


PEAKS AREA HT REJECT

11 + Common Soln.

15:07 88/02/13

ALCOHOLS



4 2 15:07 88/02/13

THOD 1 ALCOHOLS CALCULATION: %

T	AREA	BC	AREA %
.40	0.0145	T	0.0044
.90	188.6770	T	58.0732
.70	8.5057		2.6179
.88	65.8573	T	20.2703
.70	17.4027	V	5.3564
.40	44.4371	V	13.6774

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: G. Brock
Date of Analysis: 3/11/88
Method of Analysis: Alcohols by GC
Detection Limit: 10
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030634	Methanol	< 10	< 10	0.0

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030634	Methanol	< 10	2.5	21	84

SEQUOIA ANALYTICAL LABORATORY

Scott Cocanour

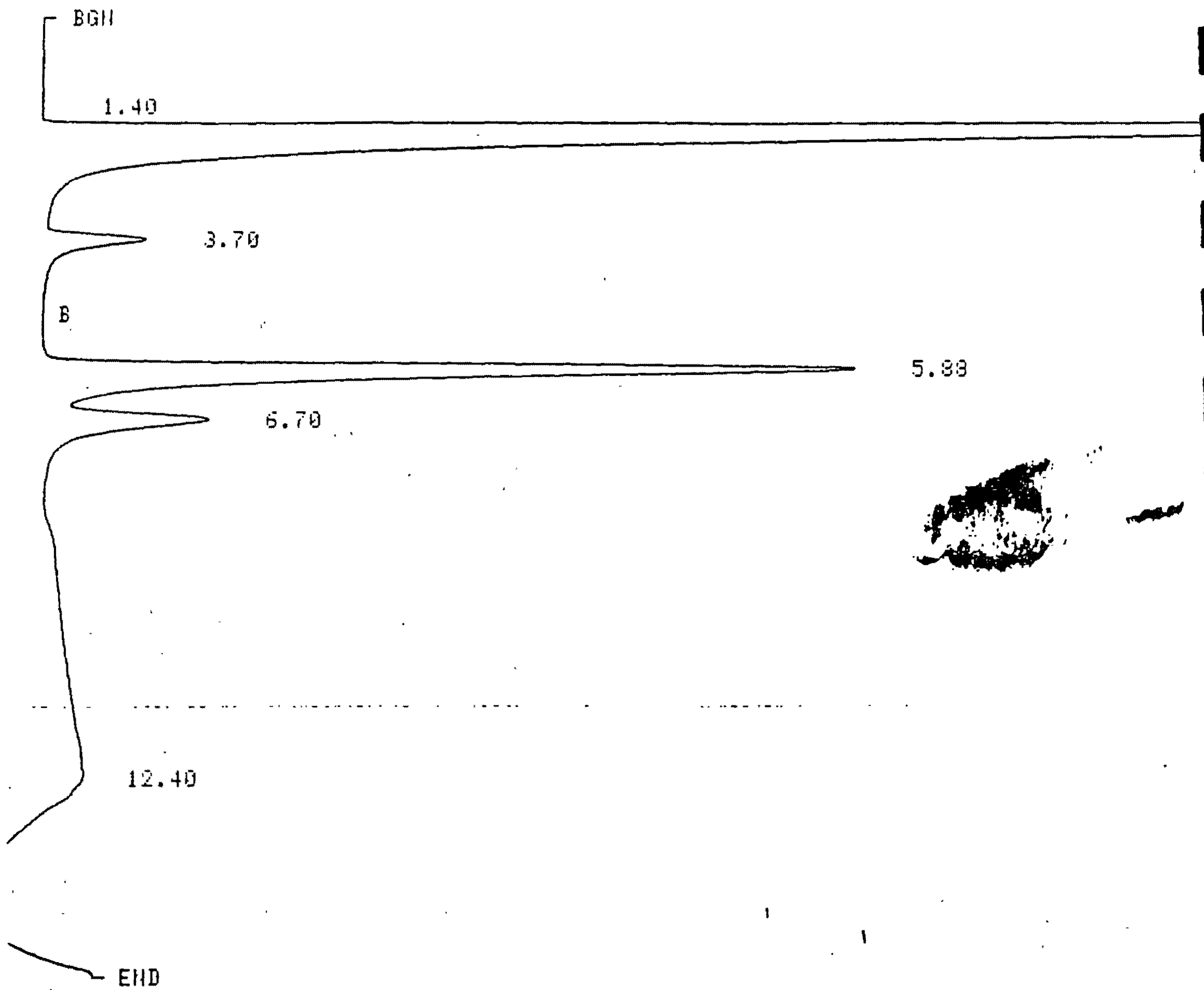
Arthur G. Burton
Laboratory Director

9 PEAKS 2 AREA/HT REJECT

11 + COMMON SOLN.

15:07 88/02/13

ALCOHOLS



4 2 15:07 88/02/13

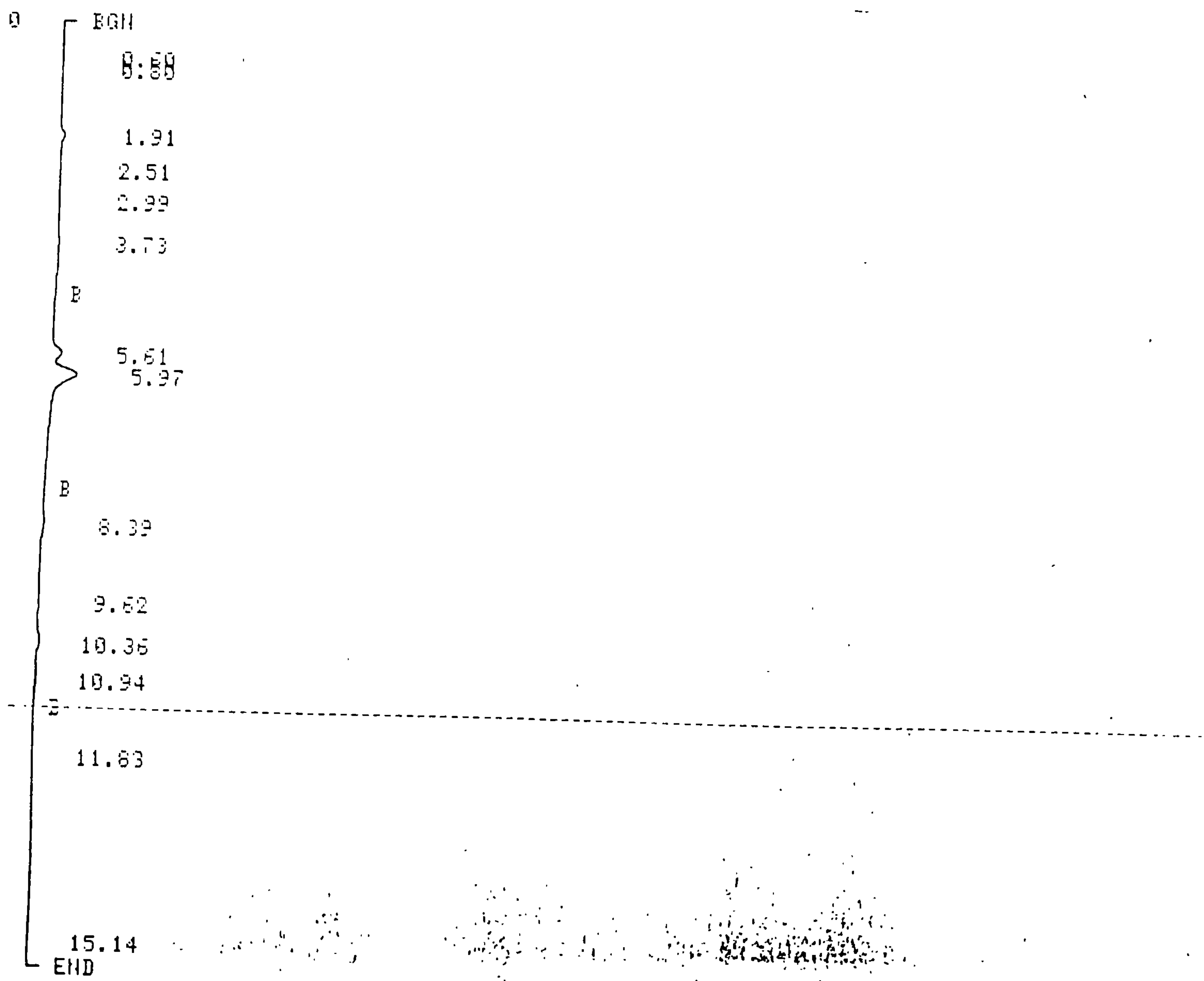
THOD 1 ALCOHOLS CALCULATION: %

T	AREA	BC	AREA %
1.40	0.0145	T	0.0044
1.90	188.6770	T	58.0732
3.70	8.5057		2.6179
5.88	65.8573	T	20.2703
6.70	17.4027	V	5.3564
12.40	44.4371	V	13.6774

Smls # 8030514.

16:04 88/02/13

L ALCOHOLS



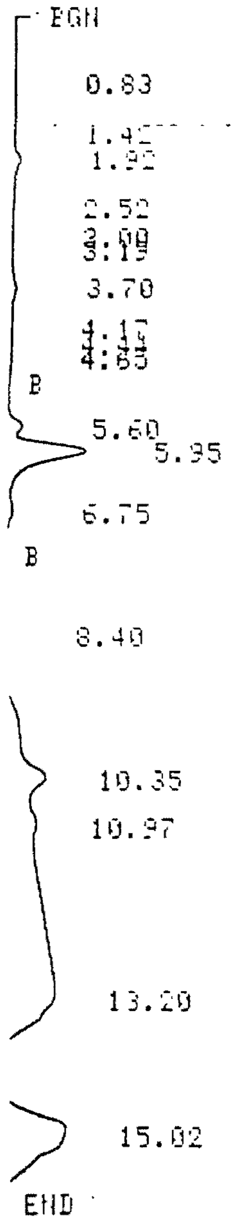
4 1 16:04 88/02/13

THOD 1 ALCOHOLS CALCULATION: %

	AREA	BC	AREA %
1.60	0.0236	T	0.3987
1.80	0.0447	T	0.7547
.91	0.6925	T	11.6748
.51	0.0811	T	1.3682
.99	0.1730	T	2.9172

16:47 88/02/13 — 5mls # 8030515

ALCOHOLS



2 16:47 88/02/13

OD 1 ALCOHOLS CALCULATION: %

	AREA	BC	AREA %
3	0.0563	V	0.1644
2	0.0763	T	0.2226
2	0.5499	T	1.6041
2	0.1017	T	0.2968
8	0.1030	T	0.3005
9	0.0229	V	0.0668
0	0.4311	T	1.2577
7	0.0988	T	0.2883
4	0.0345	T	0.1009
5	0.0610		0.1779
0	0.7181	T	2.0950
5	5.6568	T	16.5021
5	0.6082		1.7745
[illegible]	[illegible]	[illegible]	[illegible]

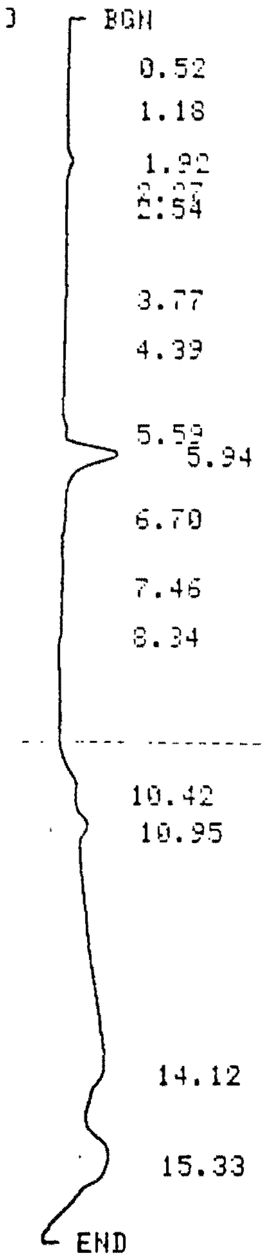
[illegible] 15.1874 V 44.1589

18 PEAKS AREA/HT REJECT

Smb # 8030634.

17:19 88/02/13

ALCOHOLS



N 3 17:19 88/02/13

THOD 1 ALCOHOLS CALCULATION: %

T	AREA	BC	AREA %
0.52	0.0674	V	0.1006
1.18	0.0167	V	0.0249
1.92	0.2944	T	0.4390
2.27	0.0253	V	0.0377
2.54	0.0421	V	0.0628

11:09 88/02/15

Smls # 8030634 Dup.

ALCOHOLS

BGN

B 0.46

1.92

B

3.66

B

5.56
5.92

7.78
8.45
9.11
9.79
10.39
10.94
11.86
12.63
13.20
13.96
14.37
15.64
16.52
18.50
20.34
22.59

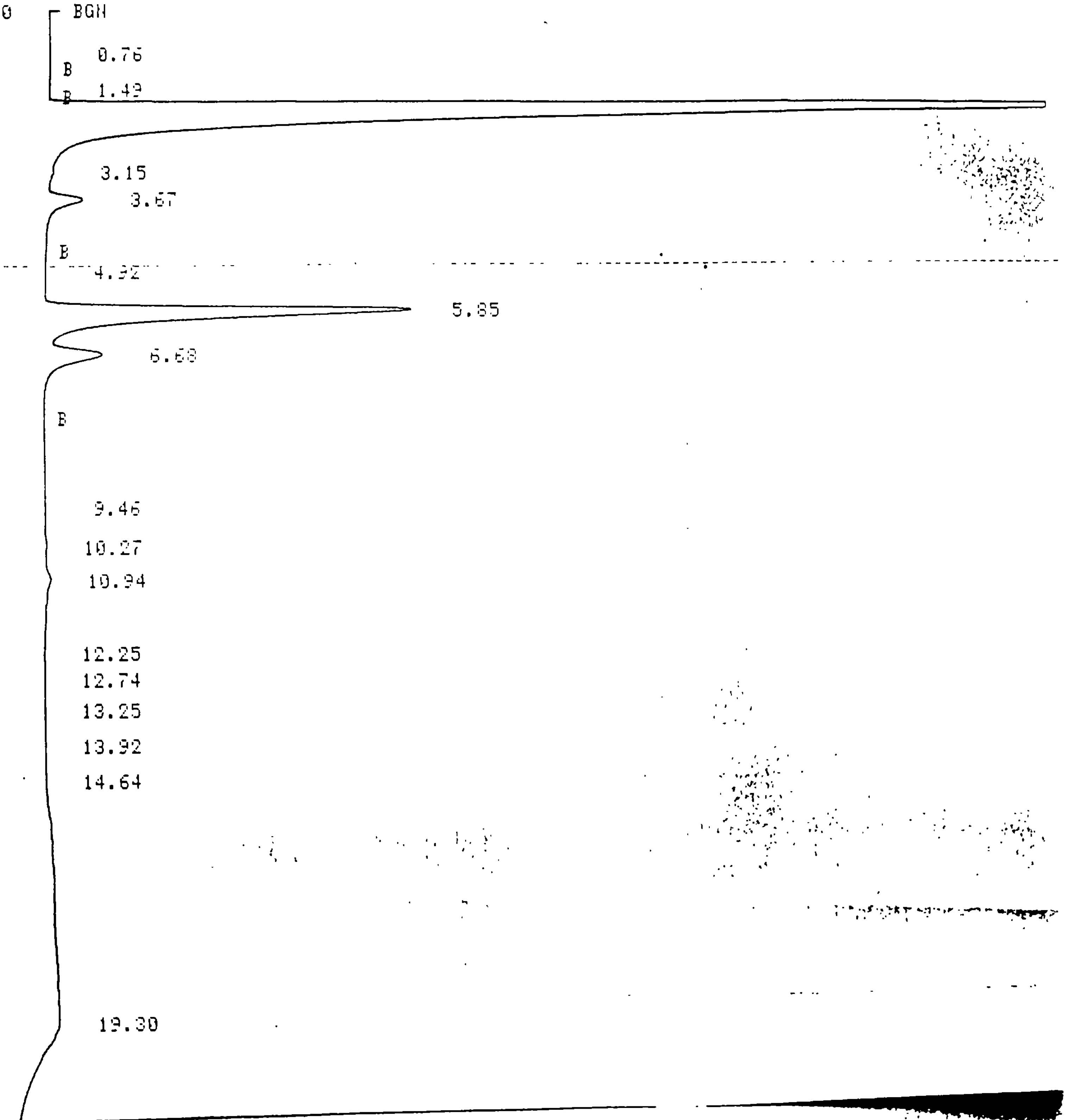
END

21 PEAKS AREA HT REJECT

5ml # 8030634 + SF

11:45 88/02/15

ALCOHOLS



RUN 2 11:45 88/02/15

METHOD 1 ALCOHOLS CALCULATION: %

SEQUOIA Analytical Laboratory
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Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/25/88

Q.C. DATA REPORT

Analyst: G. Brock
Date of Analysis: 3/11/88
Method of Analysis: EPA 604
Detection Limit: 10
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030634	4-Nitrophenol	< 10	< 10	0.0

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030635	4-Nitrophenol	< 10	20	21	105

SEQUOIA ANALYTICAL LABORATORY

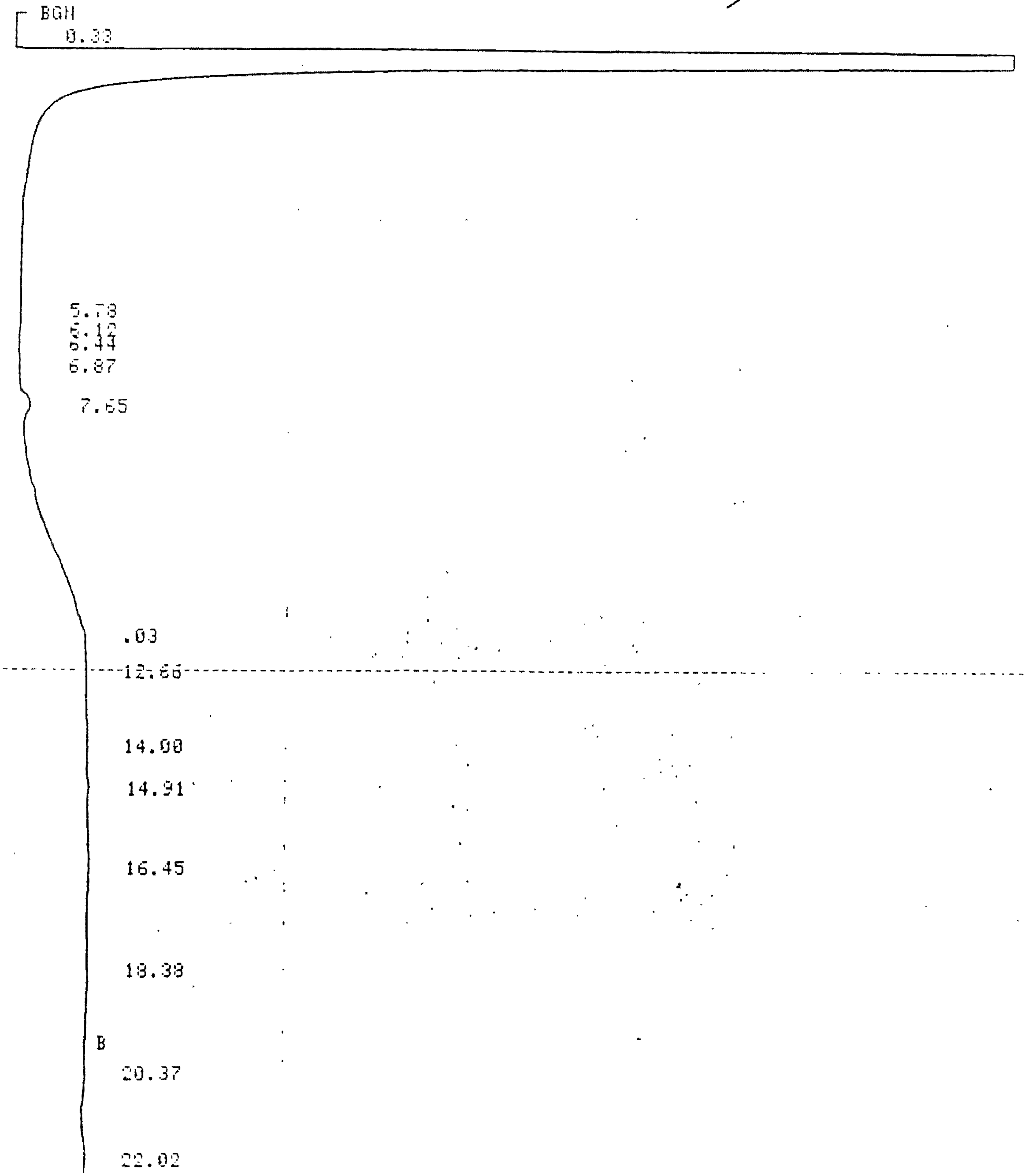
Arthur G. Burton
Laboratory Director

TIME 2 26.0 TO 0.0 MIN FB

9:06 88/03/

PHENOLS 8040

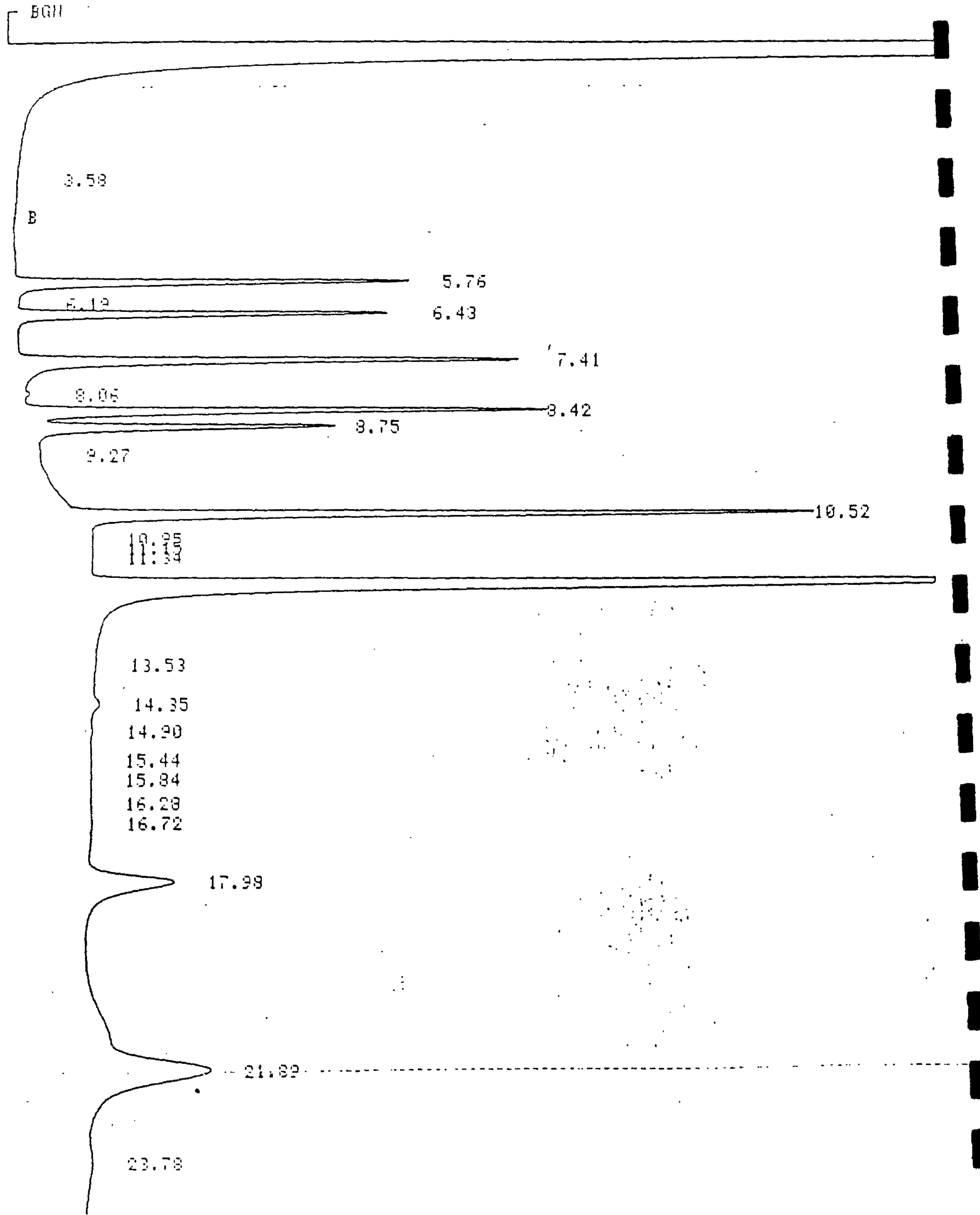
METHYLENE CHLORIDE BLANK.



WX 10 " Mix

8:27 88/03

PHENOLS 8040



UN DEVIATIONS

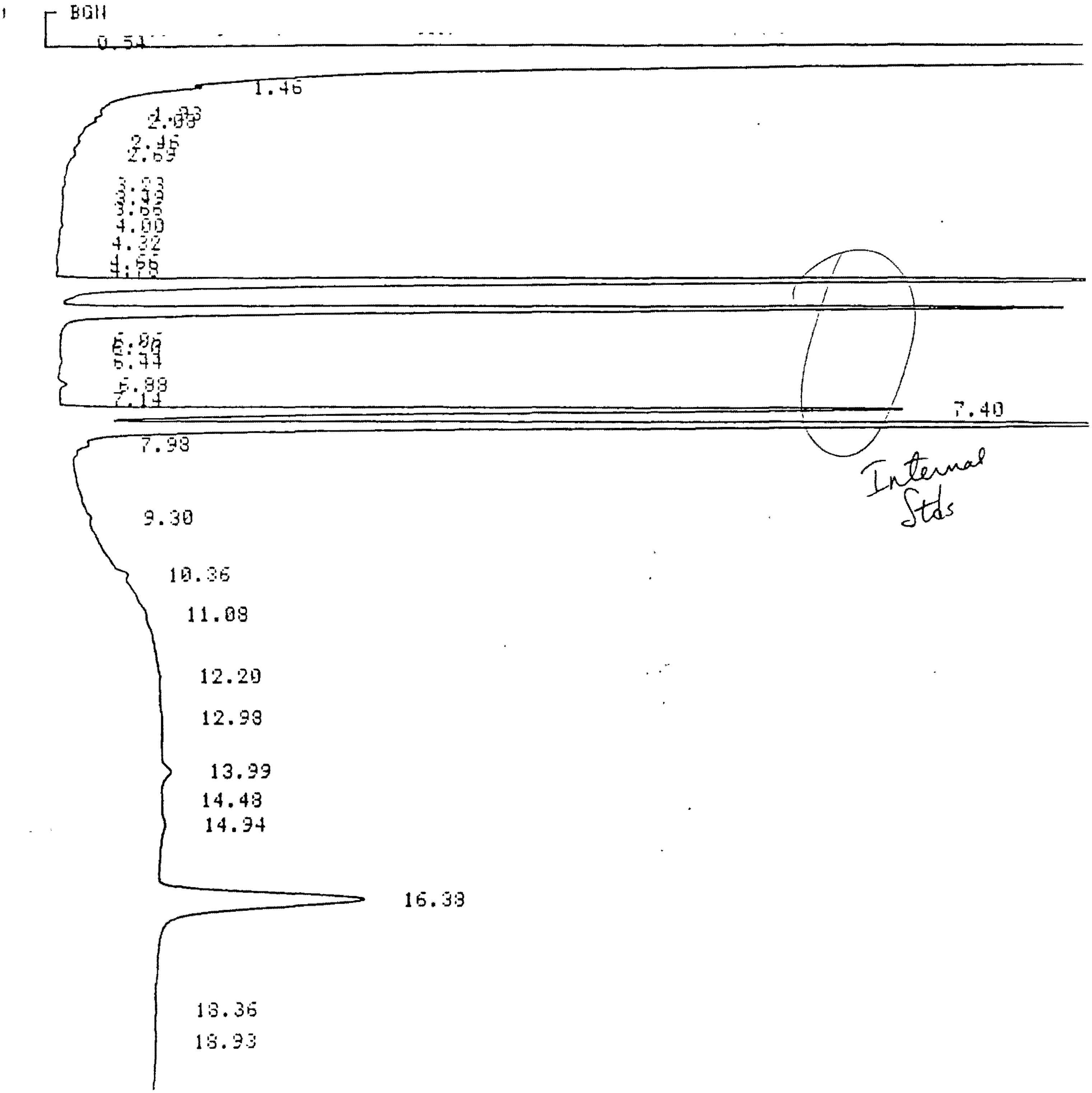
IME	ZONE	CHANGE	TYPE
18.55	ISO TIME 2	26.0 TO 0.0 MIN	KB

5λ #803C

5λ # 8030514

18:18 88/03

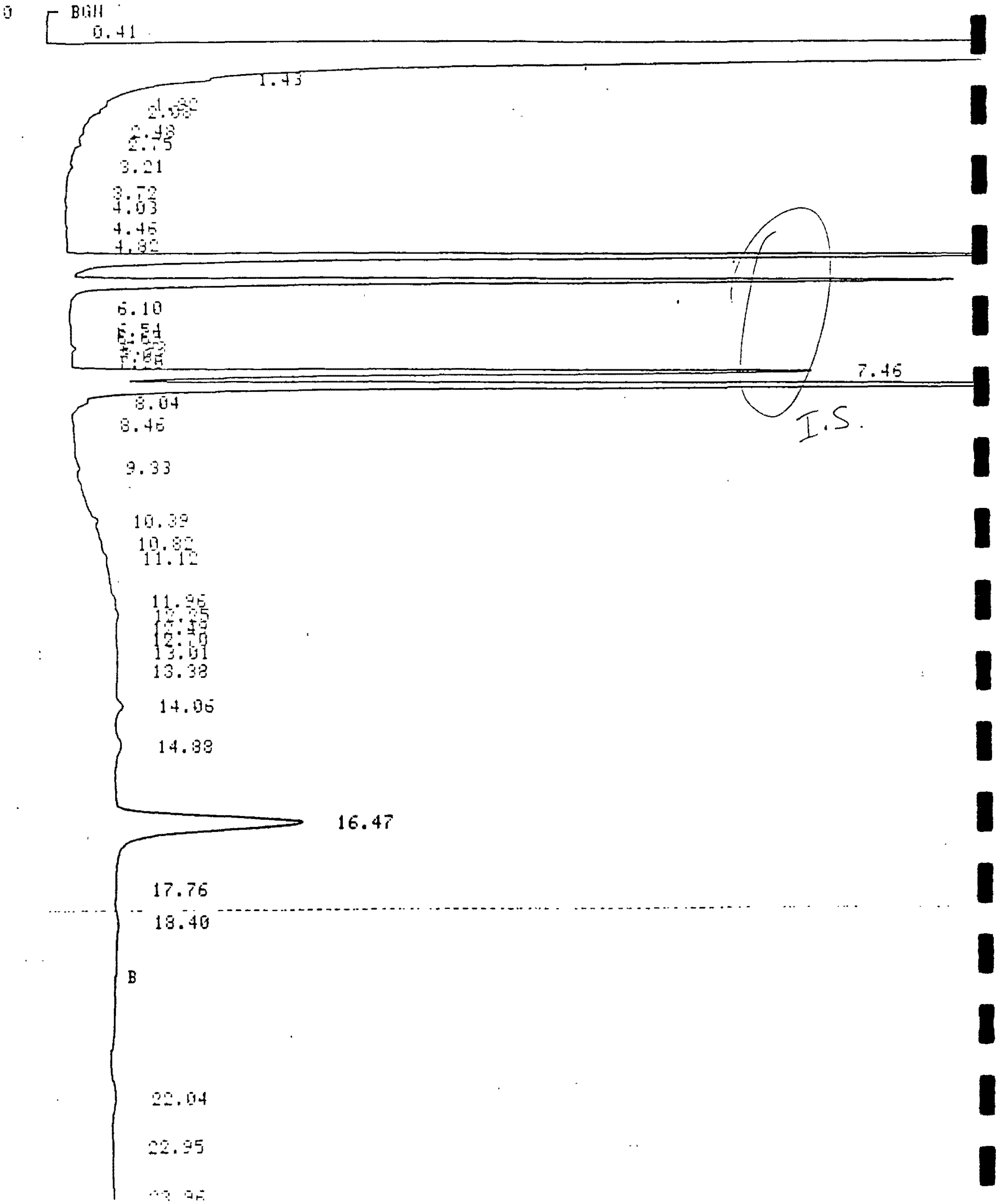
PHENOLS 8040



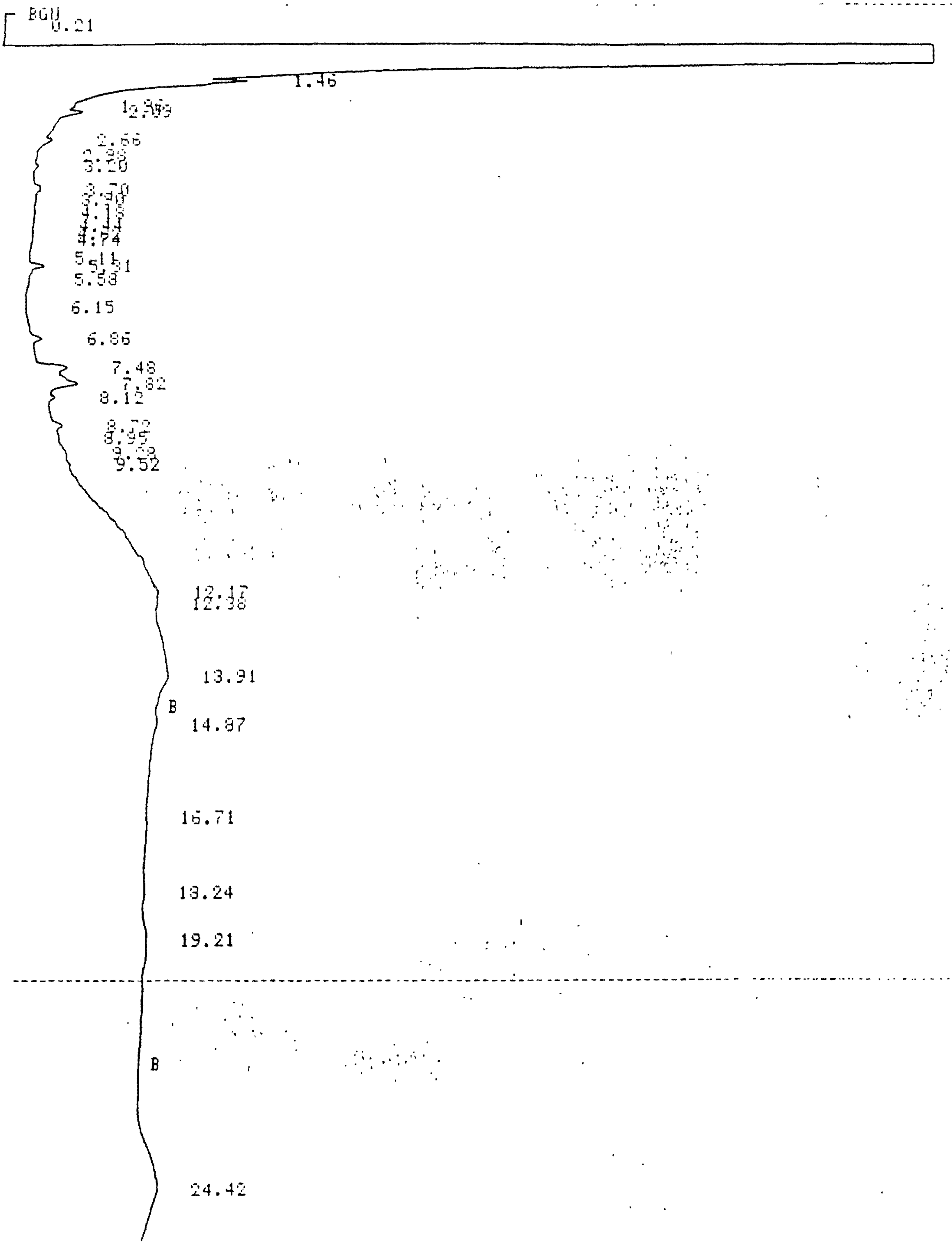
10:36 88/03

PHENOLS 8040

Sl # 8030515



PHENOLS 8040



SEQUOIA Analytical Laboratory
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Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: E.Esilew
Date of Analysis: 3/10/88
Method of Analysis: EPA 3510/2015
Detection Limit: 50
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030514	TPH	< 50	< 50	0.0

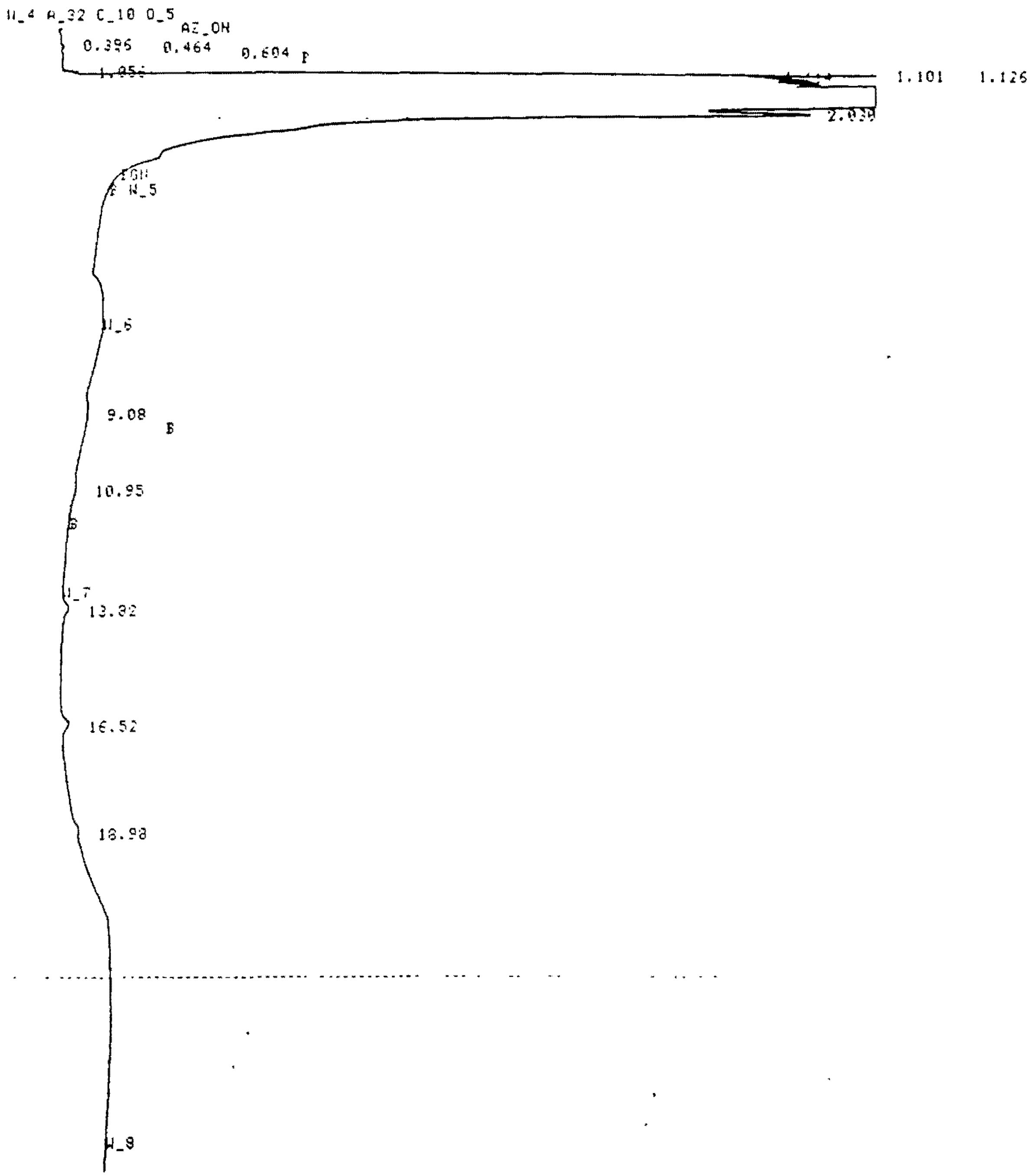
Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030514	TPH	< 50	84	111	130

SEQUOIA ANALYTICAL LABORATORY

Scot Cosamour

Arthur G. Burton
Laboratory Director

FILE 139 RUN 38 STARTED 23:22.2 80/01/07 24HR RUSHES 3A Methylene Chloride D/K
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

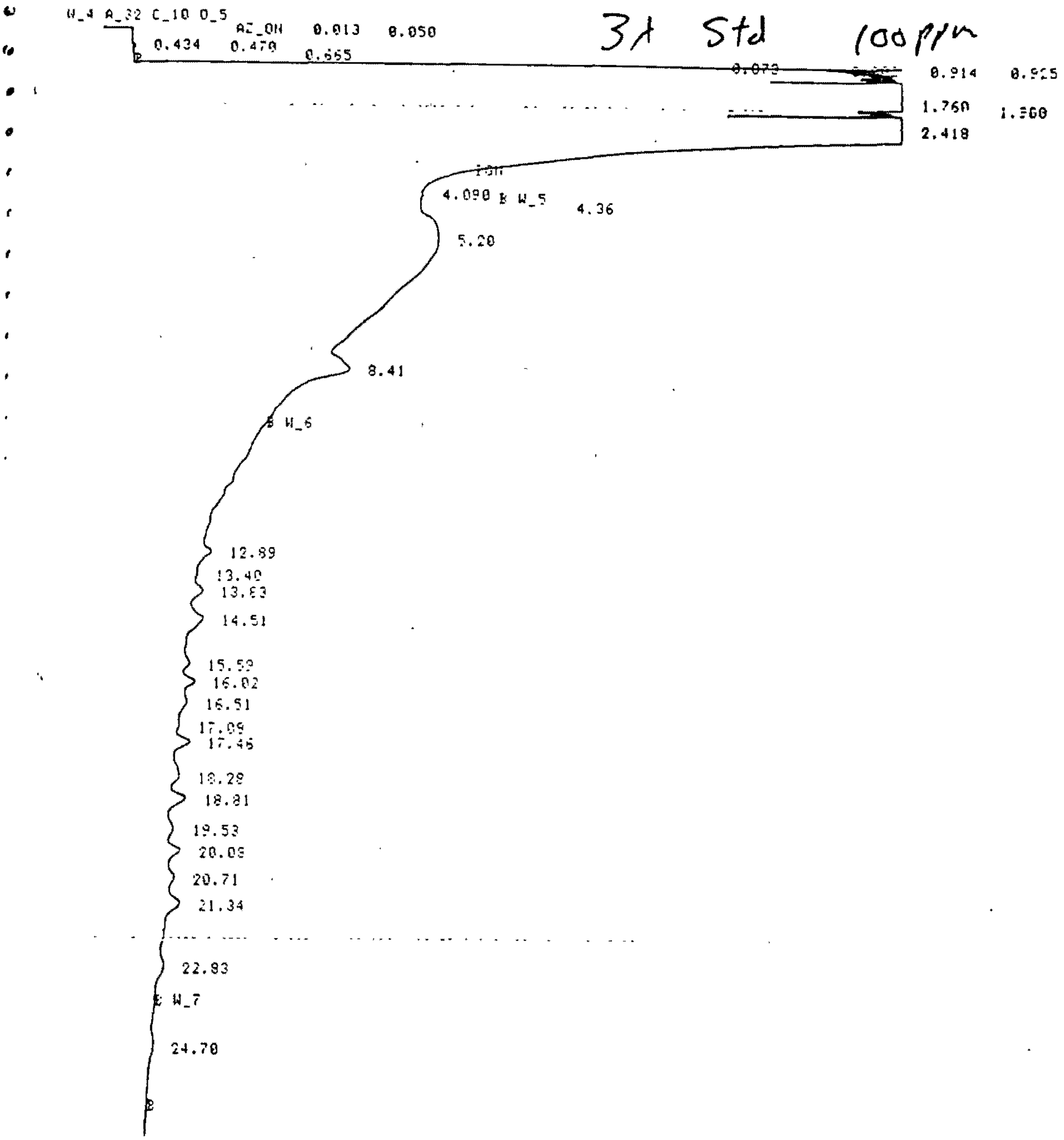


FILE 139 RUN 38 STARTED 23:22.2 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
9.08	21075	0.7280		19.3203	10.1683
10.95	12011	0.7242		11.0110	10.1142
13.82	43298	2.5356	V	39.6926	35.4132
16.52	32699	2.5579	V	29.9761	35.7256
18.98		0.6142	V		8.5788

4 PEAKS > AREA REJECT 109082 TOTAL AREA
5 PEAKS > HEIGHT REJECT 7.1599 TOTAL HEIGHT

FILE 102 PUH 1 STARTED 18:02.4 80/01/06 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06



FILE 102 PUH 1 STARTED 18:02.4 80/01/06 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

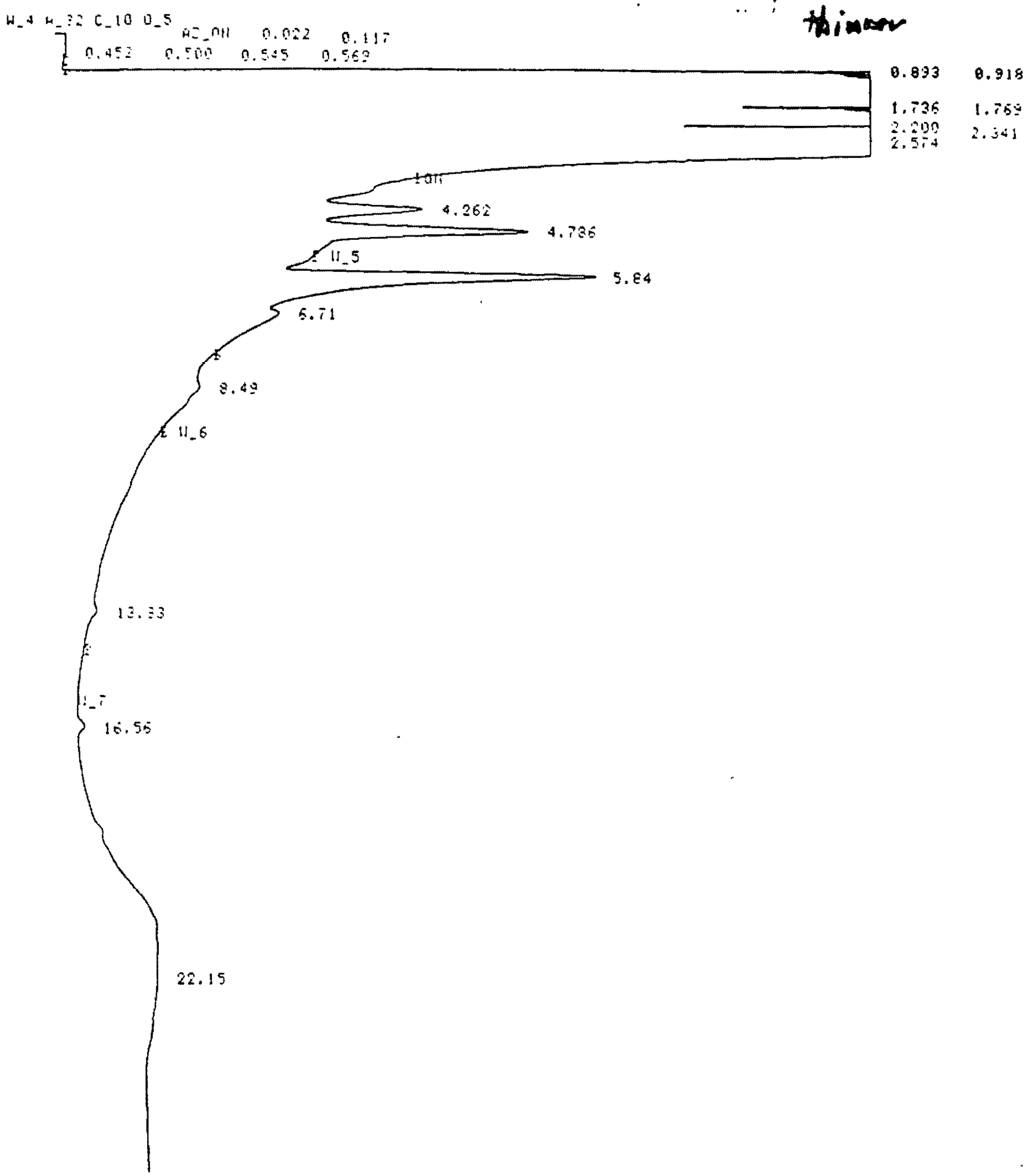
RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
4.090	3328	0.7018		0.1008	0.8263
4.36	2167	0.3246	V	0.0656	0.3821
5.20	2061850	14.6821	V	62.4593	17.2859
~~8.41~~	~~275516~~	13.3193		8.3462	15.6814
12.89	62102	4.1125	V	1.8812	4.8418
13.40	4559	0.4961	V	0.1381	0.5840
13.83	61099	3.8270	V	1.8508	4.5056
14.51	125397	5.7742	V	3.7983	6.7982
15.59	31317	2.2942	V	0.9487	2.7010
16.02	55528	4.4106	V	1.6821	5.1928
16.51	28886	1.8919	V	0.8750	2.2274
17.08	5618	0.6017	V	0.1702	0.7085
17.46	78083	5.6888	V	2.3654	6.6977
18.29	68012	2.9204	V	2.0603	3.4383
18.81	99502	6.2023	V	3.0142	7.3022
19.53	38966	2.1170	V	1.1804	2.4924
20.06	71312	4.7726	V	2.1602	5.6190
20.71	37317	2.3301	V	1.1304	2.7433
21.34	112607	5.0892	V	3.4112	5.9917
22.83	52621	2.2305		1.5940	2.6260
24.70	25334	1.1503		0.7674	1.3543

958,247

21 PEAKS > AREA REJECT 3301108 TOTAL AREA
21 PEAKS > HEIGHT REJECT 84.9369 TOTAL HEIGHT

FILE 156 RUN 55 STARTED 20:19.7 80/01/09 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

paint std
thinner



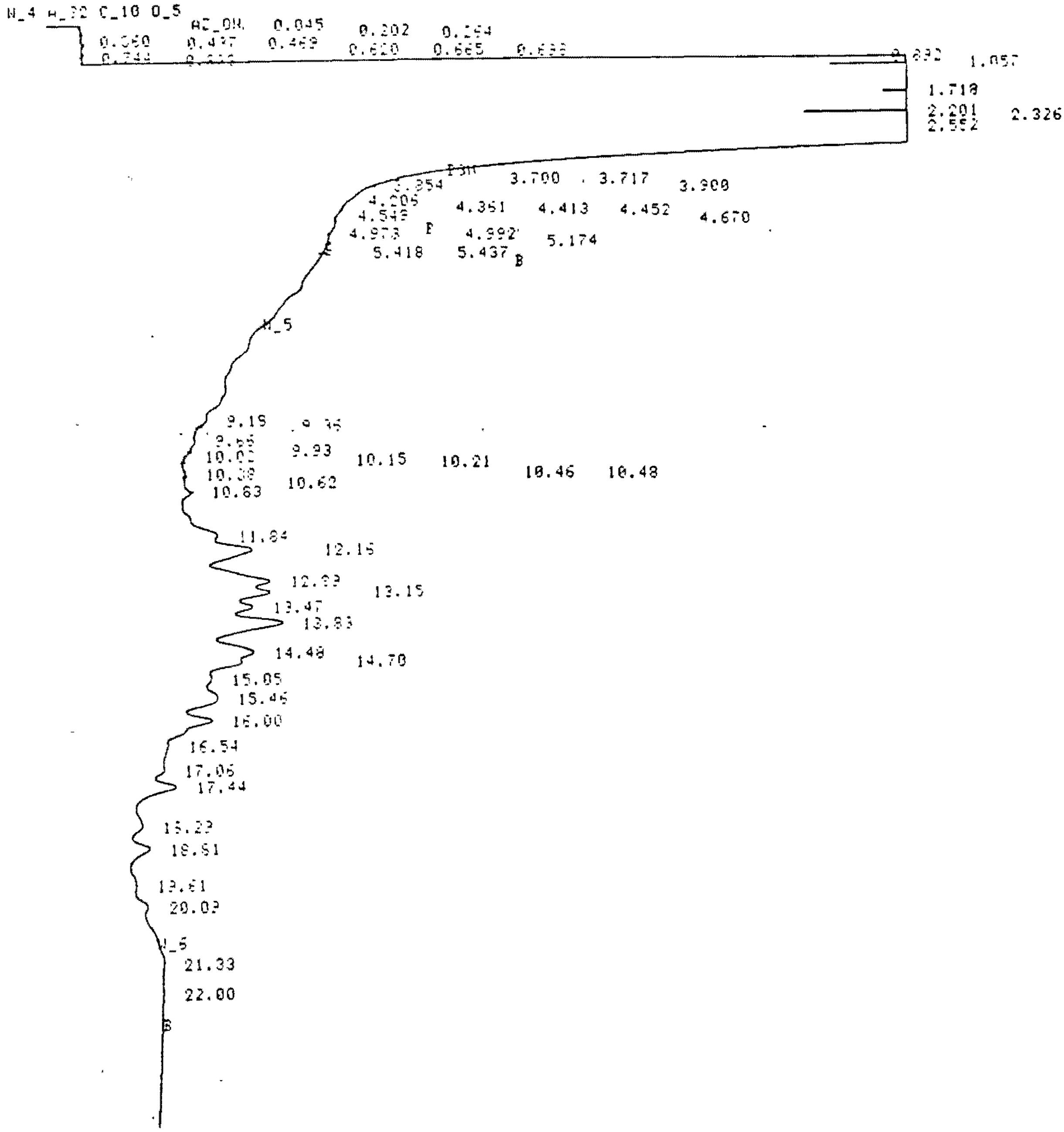
FILE 156 RUN 55 STARTED 20:19.7 80/01/09 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
4.262	464158	35.8552	V	6.8368	14.0301
4.786	1121297	77.0258		16.5159	30.1402
5.84	2106964	116.6415	V	31.0344	45.6418
6.71	142630	5.7654		2.1009	2.2560
8.49	121748	3.0600		1.7933	1.1974
13.83	25969	1.9692		0.3825	0.7701
16.56	40866	2.6841	V	0.6019	1.0503
22.15	2765497	12.5585	V	40.7343	4.9141

8 PEAKS > AREA REJECT 6769118 TOTAL AREA
8 PEAKS > HEIGHT REJECT 255.5586 TOTAL HEIGHT

FILE 161 RUN 60 STARTED 22:45.8 80/01/08 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

Kerosene



FILE 161 RUN 60 STARTED 22:45.8 80/01/08 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

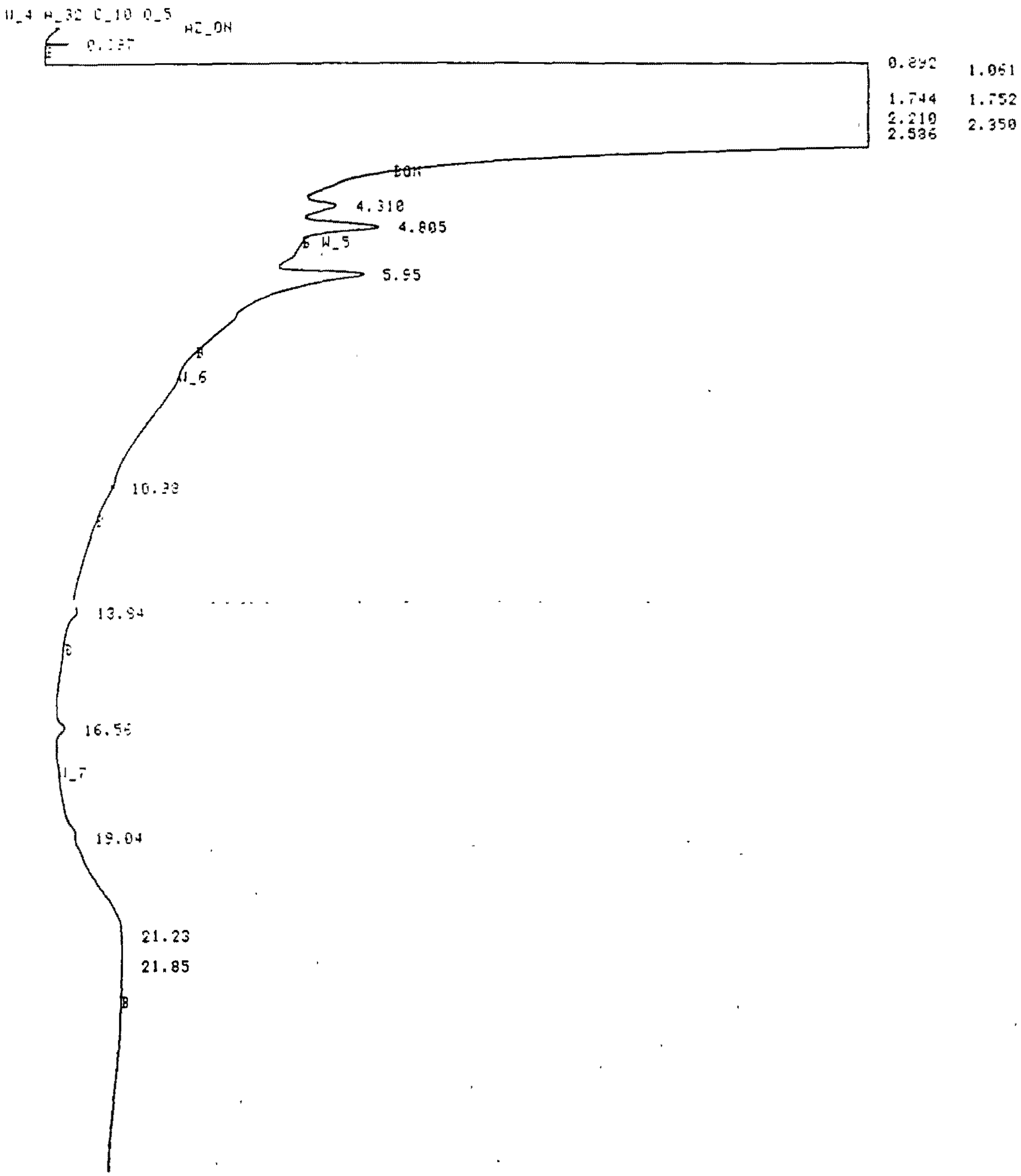
RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
3.700	485	1.0490	V	0.0265	0.7134
3.717	1559	0.7109	V	0.0952	0.4833
3.854	1335	1.2921	V	0.0729	0.8786
3.900	3554	0.7377	V	0.1943	0.5017
4.205	99	0.6706	V	0.0054	0.4560
4.361	895	0.4039	V	0.0489	0.2746
4.413	502	0.4688	V	0.0274	0.3188
4.452	1475	0.5457	V	0.0806	0.3711
4.549	26	0.3915	V	0.0014	0.2662
4.670	4869	0.8009		0.2661	0.5445
4.973	461	1.1062	V	0.0252	0.7523
4.992	4400	0.9259	V	0.2405	0.6296
5.174	1315	1.6896		0.0718	1.1490
5.418	499	0.7106	V	0.0272	0.4832
5.437	8602	1.4059		0.4702	0.9560
9.19	12613	1.0369	V	0.6894	0.7051
9.36		1.1477	V		0.7805
9.66	11137	0.9962	V	0.6087	0.6926
9.93	1517	0.6817	V	0.0829	0.4635
10.02	2537	0.7303	V	0.1397	0.4966
10.15	626	1.1053	V	0.0342	0.7516
10.21	1375	0.4093	V	0.0752	0.2777
10.38	3149	0.5033	V	0.1721	0.3422

FILE 1?1 RUN 40 STARTED 22:45.2 80/01/03 24HR RUSHES
METHOD 1 HIGHFOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
2.700	485	1.0490	U	0.0265	0.7134
3.717	1553	0.7103	U	0.0852	0.4833
3.854	1315	1.2921	U	0.0723	0.8786
3.900	3554	0.7377	U	0.1943	0.5017
4.205	99	0.6706	U	0.0054	0.4560
4.341	335	0.4029	U	0.0183	0.2746
4.412	502	0.4668	U	0.0274	0.3188
4.452	1475	0.5457	U	0.0806	0.3711
4.549	26	0.3915	U	0.0014	0.2662
4.670	4959	0.8009		0.2661	0.5446
4.977	461	1.1062	U	0.0252	0.7523
4.992	4400	0.9253	U	0.2405	0.6295
5.174	1315	1.6896		0.0718	1.1490
5.419	499	0.7106	U	0.0272	0.4832
5.407	8602	1.4059		0.4702	0.9560
9.18	12613	1.0369	U	0.6894	0.7051
9.36		1.1477	U		0.7505
9.56	11137	0.3962	U	0.6087	0.6026
9.93	1517	0.6817	U	0.0829	0.4635
10.02	2537	0.7303	U	0.1297	0.4366
10.15	626	1.1053	U	0.0342	0.7516
10.21	1375	0.4083	U	0.0752	0.2777
10.29	3149	0.5022	U	0.1721	0.3422
10.46	541	1.0781	U	0.0296	0.7331
10.48	921	1.4250	U	0.0503	0.9690
10.62	3796	0.3643	U	0.2069	0.2432
10.87	28999	3.5229	U	1.5851	2.3956
11.84		2.7621	U		1.8782
12.16	239219	14.6943	U	13.0756	9.9922
12.83	134385	9.7154	U	7.3454	6.6092
13.15	73018	8.1605	U	3.9911	5.5491
13.47	52070	6.0377	U	2.8461	4.1057
13.93	318919	20.1321	U	17.4319	13.6905
14.49	120205	8.0572	U	6.5704	5.4789
14.70	23726	3.3199	U	1.2969	2.2576
15.05	14249	1.3896	U	0.7798	0.9449
15.46	149132	7.2269	U	8.0969	4.9143
16.00	194729	11.9553	U	10.6437	8.1296
16.54	2742	0.3626	U	0.1499	0.2466
17.06	19773	1.7900	U	1.0805	1.2104
17.44	132993	10.1658	U	7.2698	6.9128
18.23	63048	3.3466	U	3.4462	2.2757
18.91	107789	6.8519	U	5.8917	4.6593
19.61	20947	1.0251	U	1.1450	0.6971
20.09	31145	2.4836	U	1.7023	1.6888
21.33	27169	1.4330	U	1.4850	0.9745
22.08	7990	0.3540		0.4367	0.2407

[illegible] PEAKS [illegible] AREA REJECT [illegible] 1829512 TOTAL AREA [illegible]
[illegible] TOTAL HEIGHT [illegible]

FILE 157 RUN 56 STARTED 21:16.4 80/01/03 24HR RUSHES 1λ Lacquer Std
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

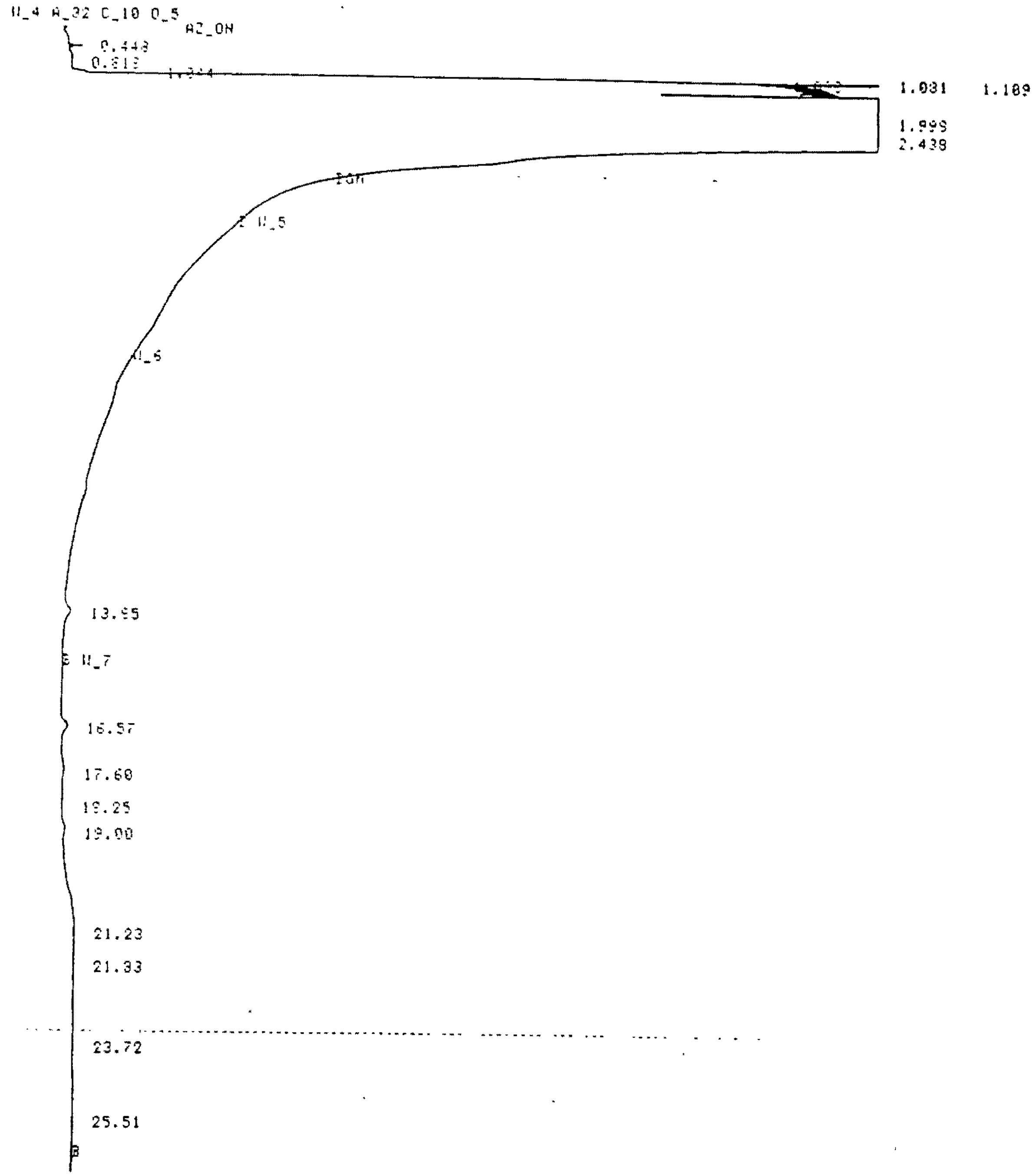


FILE 157 RUN 56 STARTED 21:16.4 80/01/03 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
4.310	146265	11.3551	V	8.9267	13.4928
4.305	330243	28.3201		23.2329	33.6516
5.95	907874	35.0729		55.4710	41.6756
10.93		1.1033			1.3110
13.24	32586	2.3782		1.9910	2.8259
16.56	47261	3.0981	V	2.8876	3.6814
19.04		0.7692	V		0.9140
21.23	104424	1.7375	V	6.3903	2.0646
21.85	18011	0.3225		1.1005	0.3832

7 PEAKS > AREA REJECT 1636663 TOTAL AREA
9 PEAKS > HEIGHT REJECT 84.1570 TOTAL HEIGHT

FILE 121 RUN 20 STARTED 03:52.6 80/01/07 24HR RUSHES 37 8030514 500:1
% METHOD 1 HIGHBOIL LAST EDITED 10:01.1 80/01/06

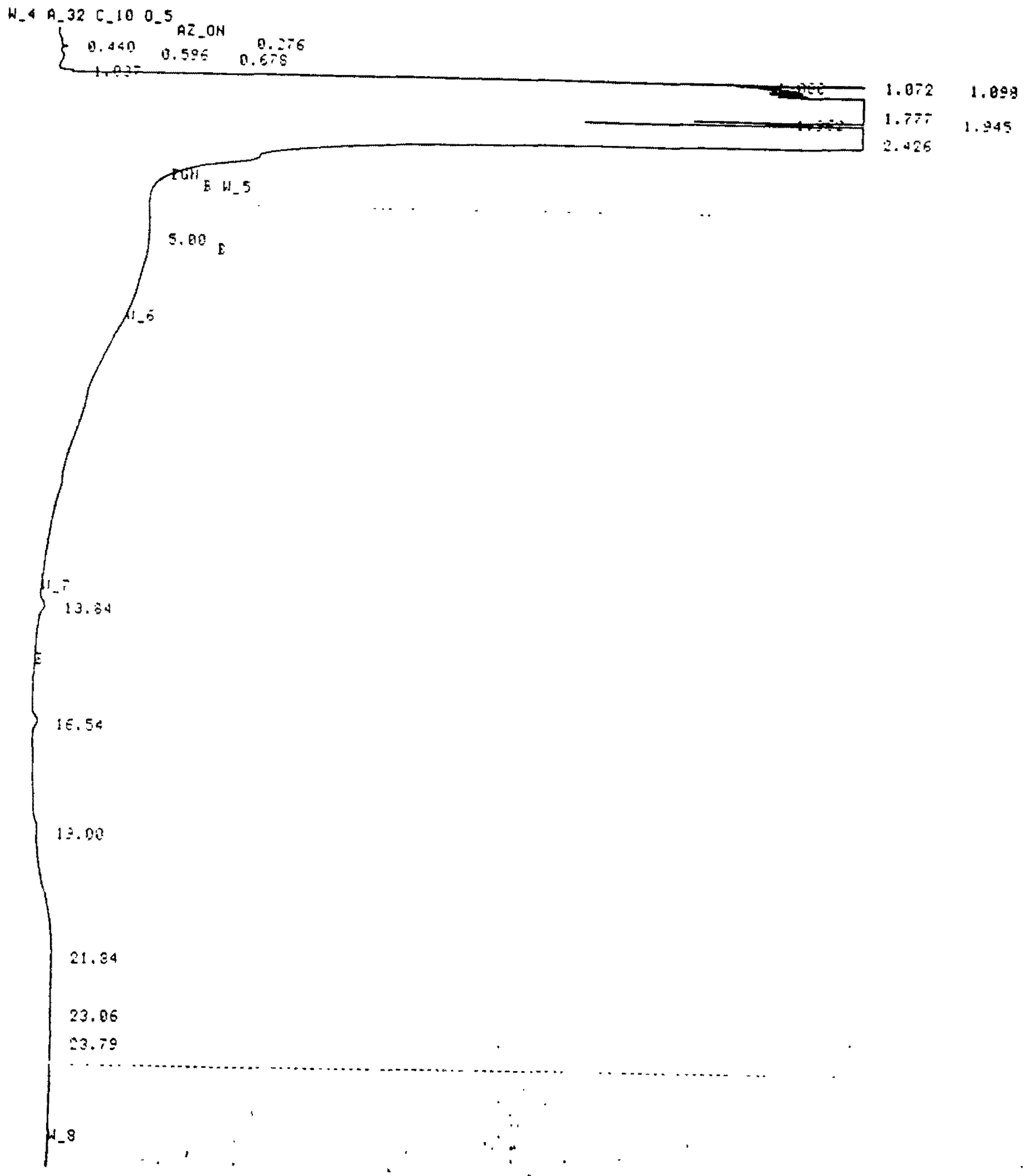


FILE 121 RUN 20 STARTED 03:52.6 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 10:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.85	35849	2.1972		25.8368	29.9571
16.57	30543	2.2241	V	22.0128	30.3240
17.60	14687	0.7108	V	10.5852	9.6919
18.25	3682	0.1873	V	2.6533	2.5532
19.00	15090	0.9697	V	10.8756	13.2213
21.23	23969	0.6974	V	17.2749	9.5087
21.83	3191	0.0914	V	2.2998	1.2463
23.72	7261	0.1312	V	5.2323	1.7839
25.51	4480	0.1253		3.2288	1.7087

9 PEAKS > AREA REJECT 138752 TOTAL AREA
9 PEAKS > HEIGHT REJECT 7.3344 TOTAL HEIGHT

FILE 122 RUN 21 STARTED 04:25.4 80/01/07 24HR RUSHES 37 803 0614 500:1 Dup.
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

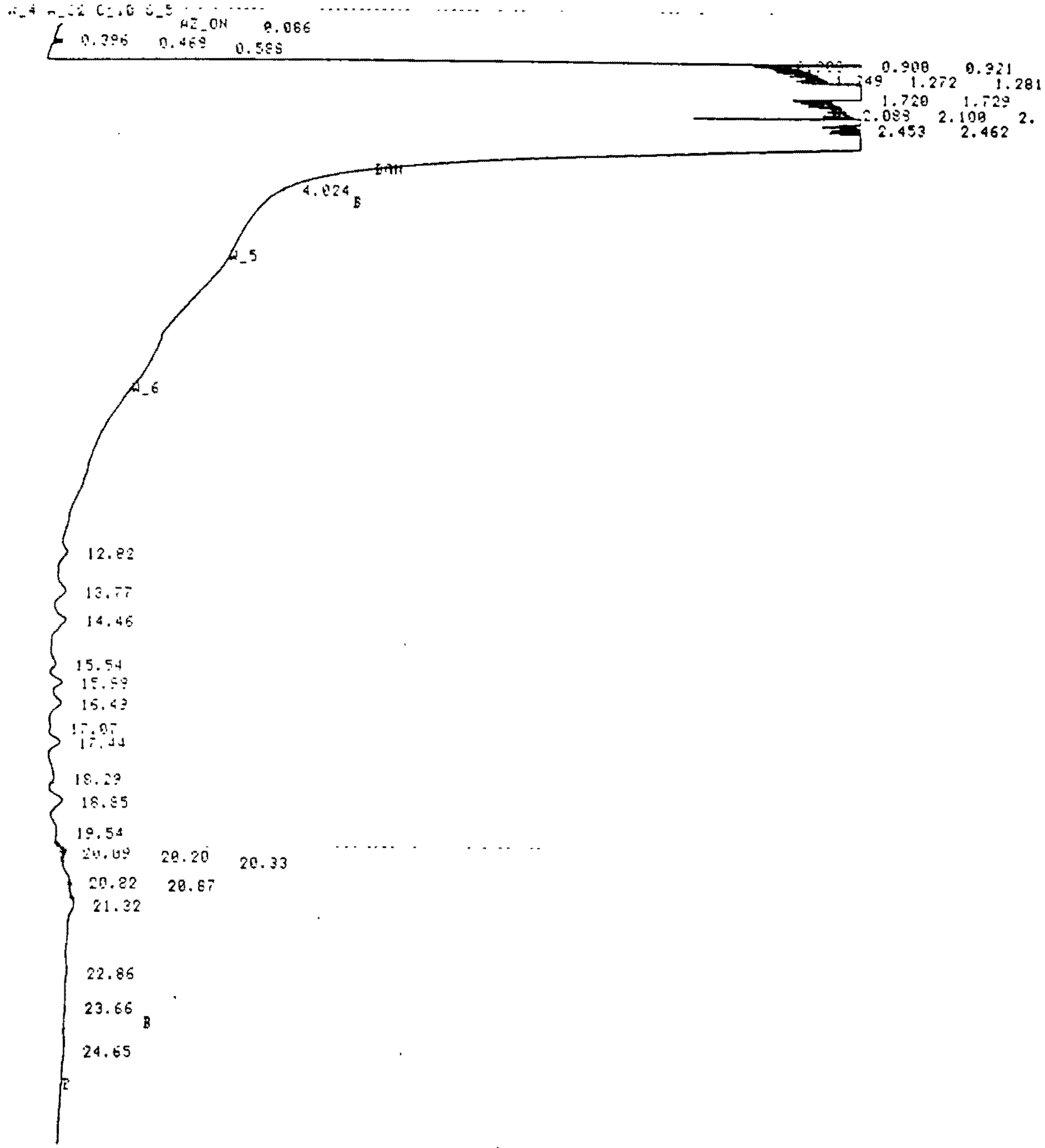


FILE 122 RUN 21 STARTED 04:25.4 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
5.00	1877	0.1317		1.2140	2.3411
13.84	29073	2.0264		18.8042	36.0294
16.54	35200	2.1483	U	22.7671	38.1971
19.00		0.5143	U		9.1443
21.84	78995	0.5332	U	51.0931	9.4795
23.06	5829	0.1301	U	3.7702	2.3140
23.79	3636	0.1403	U	2.3514	2.4946

6 PEAKS > AREA REJECT 154609 TOTAL AREA
7 PEAKS > HEIGHT REJECT 5.6243 TOTAL HEIGHT

FILE 133 RUN 32 STARTED 20:09.9 80/01/07 24HR RUSHES 3λ 8030514 Slike
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

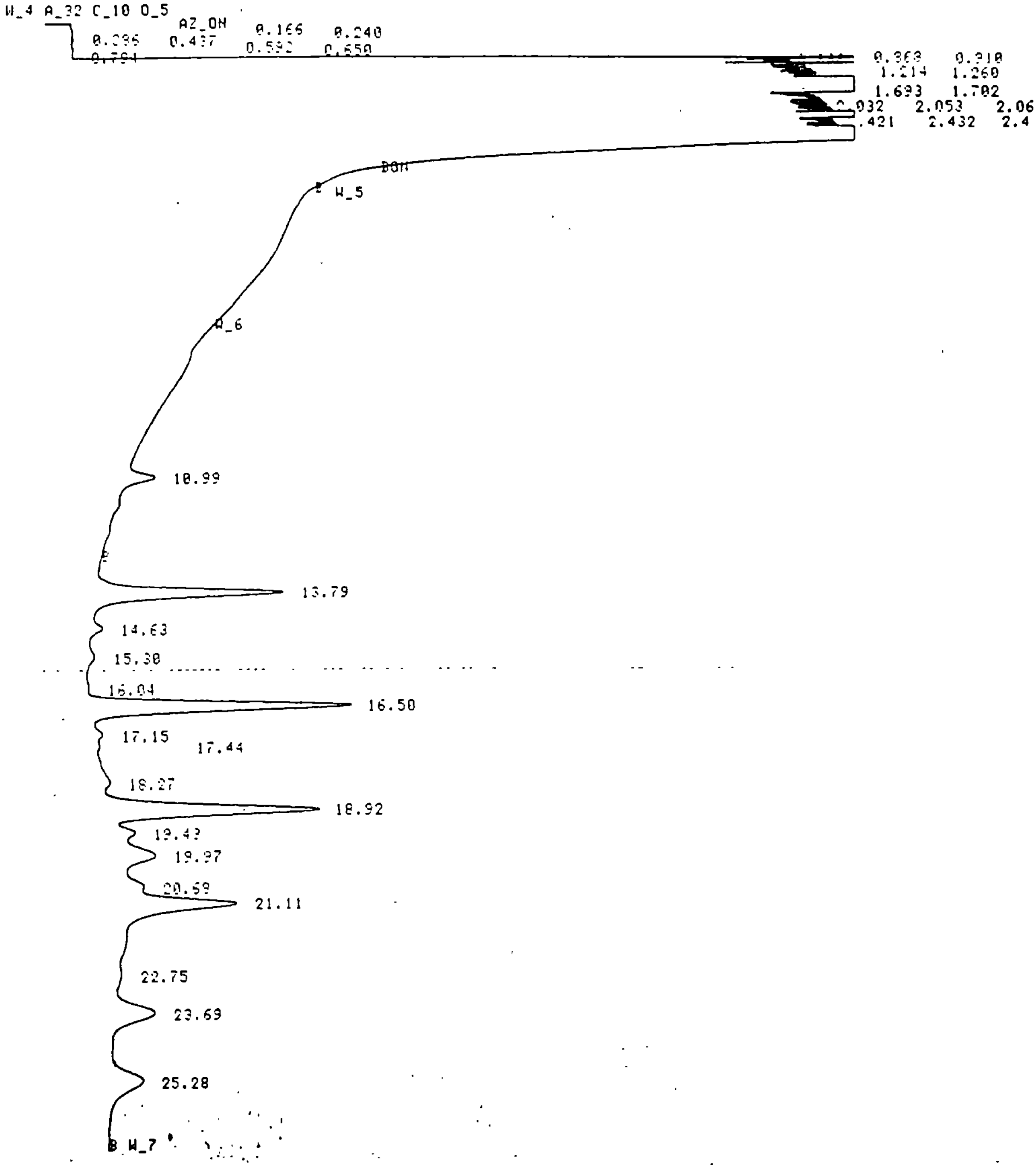


FILE 133 RUN 32 STARTED 20:09.9 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
4.024		1.3078			2.9862
12.82	40814	2.5294	V	5.5726	5.7757
13.77	77919	3.9081	V	10.6388	8.9240
14.46	100893	4.9740	V	13.7756	11.3578
15.54	29409	2.0317	V	4.0154	4.6394
15.98	49196	4.0107	V	6.7171	9.1582
16.49	57948	3.7193	V	7.9120	8.4929
17.07	4393	0.4676	V	0.5998	1.0678
17.44	60609	4.3100	V	8.2754	9.8418
18.29	47686	1.9409	V	6.5109	4.4321
18.85	82611	4.5899	V	11.2795	10.4808
19.54	35526	1.5387	V	4.8506	3.5134
20.09	22662	1.9955	V	3.0942	4.5566
20.28	1437	0.7529	V	0.1962	1.7192
20.33	1489	0.4729	V	0.2033	1.0799
20.82	11899	0.9029	V	1.6246	2.0617
20.87	1152	0.6228	V	0.1572	1.4221
21.32	66388	2.2570	V	9.0644	5.1538
22.86	16802	0.6756	V	2.2941	1.5427
23.66	7274	0.2945		0.9931	0.6724
24.65	16297	0.4911		2.2251	1.1214

20 PEAKS > AREA REJECT 732401 TOTAL AREA
21 PEAKS > HEIGHT REJECT 43.7932 TOTAL HEIGHT

FILE 130 RUN 29 STARTED 17:57.7 80/01/07 24HR RUSHES 3λ 8036515 (500:1)
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

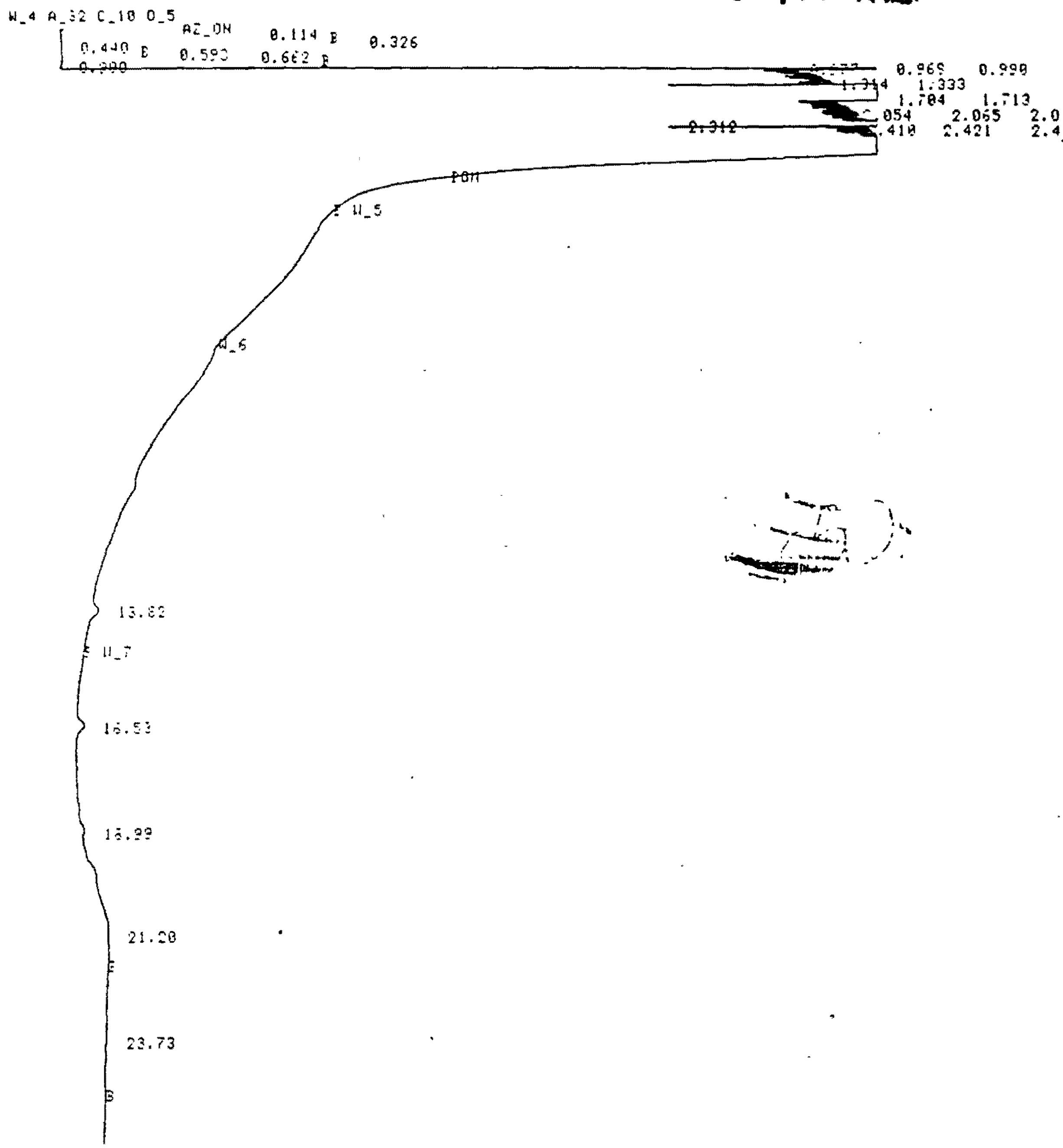


FILE 130 RUN 29 STARTED 17:57.7 80/01/07 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
10.99	127810	11.0023		2.1277	3.0644
13.79	1121686	72.0699	V	18.6728	20.0730
14.63	51185	4.0642	V	0.8521	1.1320
15.30	47589	2.5413	V	0.7922	0.7078
16.04	6125	0.6130	V	0.1020	0.1707
16.50	1507815	99.8720	V	25.1007	27.8164
17.15	26439	2.4113	V	0.4401	0.6716
17.44	6334	0.7671	V	0.1054	0.2136
18.27	56443	2.6939	V	0.9396	0.7503
18.92	1279973	78.9569	V	21.3078	21.9911
19.43	54394	4.6852	V	0.9055	1.3049
19.97	209546	10.9148	V	3.4893	3.0400
20.68	21849	1.9735	V	0.3637	0.5496
21.11	661267	37.8566	V	11.0081	10.5439
22.75	21887	1.0000	V	0.3644	0.2785
23.69	403992	15.3118	V	6.7253	4.2647
25.28	402738	12.3062		6.7044	3.4275

17 PEAKS > AREA REJECT 6007071 TOTAL AREA
17 PEAKS > HEIGHT REJECT 359.0397 TOTAL HEIGHT

FILE 142 RUN 41 STARTED 01:32.7 80/01/08 24HR RUSHES 3λ 8030634 (500:1)
% METHOD 1 HIGHBOIL LAST EDITED 16:01.1 80/01/06 As Paint thinner



FILE 142 RUN 41 STARTED 01:32.7 90/01/08 24HR RUSHES
% METHOD 1 HIGHBOIL LAST EDITED 18:01.1 80/01/06

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
13.82	44985	2.9820		10.7765	28.1461
16.53	47179	3.1290	V	11.3221	29.5341
18.99	5028	1.0756	V	1.2067	10.1519
21.20	316889	3.1861		76.0483	30.0728
23.73	2694	0.2220		0.6464	2.0952

5 PEAKS > AREA REJECT 416694 TOTAL AREA
5 PEAKS > HEIGHT REJECT 10.5946 TOTAL HEIGHT

KEYBOARD DIRECTED EVENTS

TIME	EVENT'	VALUE
26.220	Stop Data	

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/09/88
Date Received: 03/09/88
Date Reported: 03/14/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: E. Hackl
Date of Analysis: 3/10/88
Method of Analysis: Turbidity
Detection Limit: N/A
Units: NTU

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8030634	Turbidity	470	470	2.1

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8030634	Turbidity	95	95	200	110

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

ANAMETRIX, INC.
LABORATORY SERVICES
ENVIRONMENTAL • ANALYTICAL CHEMISTRY
2754 AIELLO DRIVE • SAN JOSE, CA 95111 • (408) 629-1132

March 11, 1988
Work Order Number 8803053
Date Received 03/09/88
Project No. JCO-104H

Robert Breynaert
Wahler & Associates
1023 Corporation Way
Palo Alto, CA 94303

Six water samples were received for analysis of volatiles by GC/MS, using the following EPA method(s):

ANAMETRIX I.D.	SAMPLE I.D.		METHOD(S)
8803053-01	JCO-104H	V-3	624
-02	"	METHOD BAILER	"
-03	"	TRAVEL BLANK	"
-04	"	V-10	"
-05	"	TRAVEL BLANK	"
-06	"	METHOD BLANK	"

RESULTS

See enclosed data sheets, Pages 2 thru 7.

EXTRA COMPOUNDS

See enclosed data sheet, Page 8.

QUALITY ASSURANCE REPORTS

See enclosed data sheets, Pages 9 thru 10.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

Burt Sutherland

Burt Sutherland
Laboratory Manager

BWS/ltm

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H V-3
Matrix : WATER
Date sampled : 03-09-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-01
Analyst : ARL
Supervisor : BWS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	7
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	110%
2037-26-5	Toluene-d8	85-124%	109%
460-00-4	p-Bromofluorobenzene	74-116%	93%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - TENTATIVELY IDENTIFIED COMPOUNDS
ANAMETRIX, INC. (408) 629-1132

Sample I.D.	: JCO-104H V-3	Anametrix I.D.	: 8803053-01
Matrix	: WATER	Analyst	: ARL
Date Sampled	: 03-09-88	Supervisor	: BWS
Analyzed VOA	: 03-10-88	Date Released	: 03-11-88
Dilution VOA	: NONE		
Analyzed SV	: NA		
Dilution SV	: NA		

	CAS #	Scan#	Volatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1	592-84-7	506	formicacid, butylester	5	<5
2				5	
3				5	
4				5	
5				5	
6				5	
7				5	
8				5	
9				5	
10				5	

	CAS #	Scan#	Semivolatile Fraction Compound Name	Det. Limit ppb	Amt. Found ppb
1				10	
2				10	
3				10	
4				10	
5				10	
6				10	
7				10	
8				10	
9				10	
10				10	
11				10	
12				10	
13				10	
14				10	
15				10	
16				10	
17				10	
18				10	
19				10	
20				10	

Tentatively identified compounds are significant chromatographic peaks (TICs) other than priority pollutants. TIC spectra are compared with entries in the National Bureau of Standards mass spectral library. Identification is made by following US EPA guidelines and acceptance criteria. TICs are quantitated by using the area of the nearest internal standard and assuming a response factor of one (1). Values calculated are ESTIMATES ONLY.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H V-10
Matrix : WATER
Date sampled : 03-09-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-04
Analyst : ARL
Supervisor : BDS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	114%
2037-26-5	Toluene-d8	85-124%	110%
460-00-4	p-Bromofluorobenzene	74-116%	92%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H METHOD BAILER
Matrix : WATER
Date sampled : 03-08-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-02
Analyst : LH
Supervisor : BWS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	114%
2037-26-5	Toluene-d8	85-124%	110%
460-00-4	p-Bromofluorobenzene	74-116%	90%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H TRAVEL BLANK
Matrix : WATER
Date sampled : 03-08-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-03
Analyst : ARL
Supervisor : BWS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	110%
2037-26-5	Toluene-d8	85-124%	101%
460-00-4	p-Bromofluorobenzene	74-116%	83%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240

ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H METHOD BLANK
Matrix : WATER
Date sampled : 03-09-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-06
Analyst : ARL
Supervisor : BWS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	109%
2037-26-5	Toluene-d8	85-124%	104%
460-00-4	p-Bromofluorobenzene	74-116%	87%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240

ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H TRAVEL BLANK
Matrix : WATER
Date sampled : 03-09-88
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 8803053-05
Analyst : ARL
Supervisor : BLDS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	115%
2037-26-5	Toluene-d8	85-124%	116%
460-00-4	p-Bromofluorobenzene	74-116%	94%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANICS ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : METHOD BLANK
Matrix : WATER
Date sampled : NA
Date analyzed: 03-10-88
Dilution : NONE

Anametrix I.D. : 1CB0310V001
Analyst : LM
Supervisor : BWS
Date released : 03-11-88
Instrument : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	10
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	%Recovery
17060-07-0	1,2-Dichloroethane-d4	84-132%	101%
2037-26-5	Toluene-d8	85-124%	102%
460-00-4	p-Bromofluorobenzene	74-116%	87%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc. BRL : Below reporting limit.

CLP VOLATILE MATRIX SPIKE REPORT -- EPA METHOD 624
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H V-3
Matrix : WATER
Date sampled : 03-09-88
Date analyzed : 03-10-88

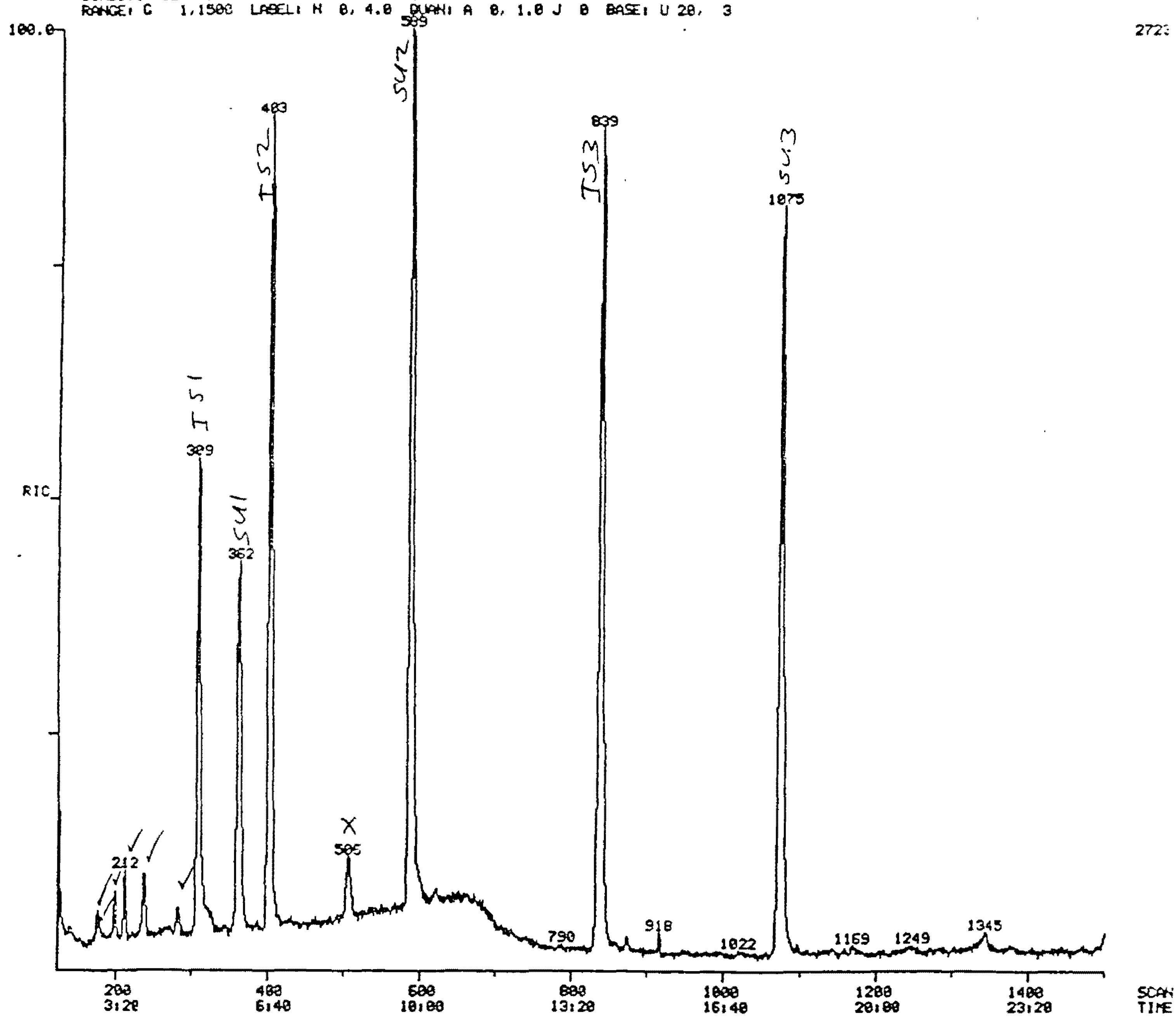
Anametrix I.D. : 8803053-01
Analyst : LH
Supervisor : Bws
Date released : 03-11-88

COMPOUND	SPIKE AMT. (UG/L)	8803053 MS (UG/L)	%REC MS	8803053 MSD (UG/L)	%REC MSD	RPD	%REC LIMITS*
.,1-DICHLOROETHENE	50	42	84%	41	82%	-2%	61-131%
'REON 113	50	59	118%	57	114%	-3%	52-150%
IETHYLENE CHLORIDE	50	45	90%	43	86%	-5%	55-130%
HLOROFORM	50	49	98%	47	94%	-4%	70-124%
,1,1-TRICHLOROETHANE	50	48	96%	46	92%	-4%	69-130%
ENZENE	50	49	98%	45	90%	-9%	69-124%
,2-DICHLOROETHANE	50	48	96%	44	88%	-9%	65-119%
RICHLOROETHENE	50	43	86%	38	76%	-12%	61-106%
-METHYL-2-PENTANONE	50	61	122%	53	106%	-14%	42-147%
OLUENE	50	51	102%	49	98%	-4%	70-128%
HLOROBENZENE	50	48	96%	45	90%	-6%	73-123%
,2-DICHLOROBENZENE	50	46	92%	44	88%	-4%	50-110%

Limits established by Anametrix, Inc.

RIC
03/10/88 17:54:00
SAMPLE: JCO-104 H ~~V3~~ V-3
CONDS.: M524/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

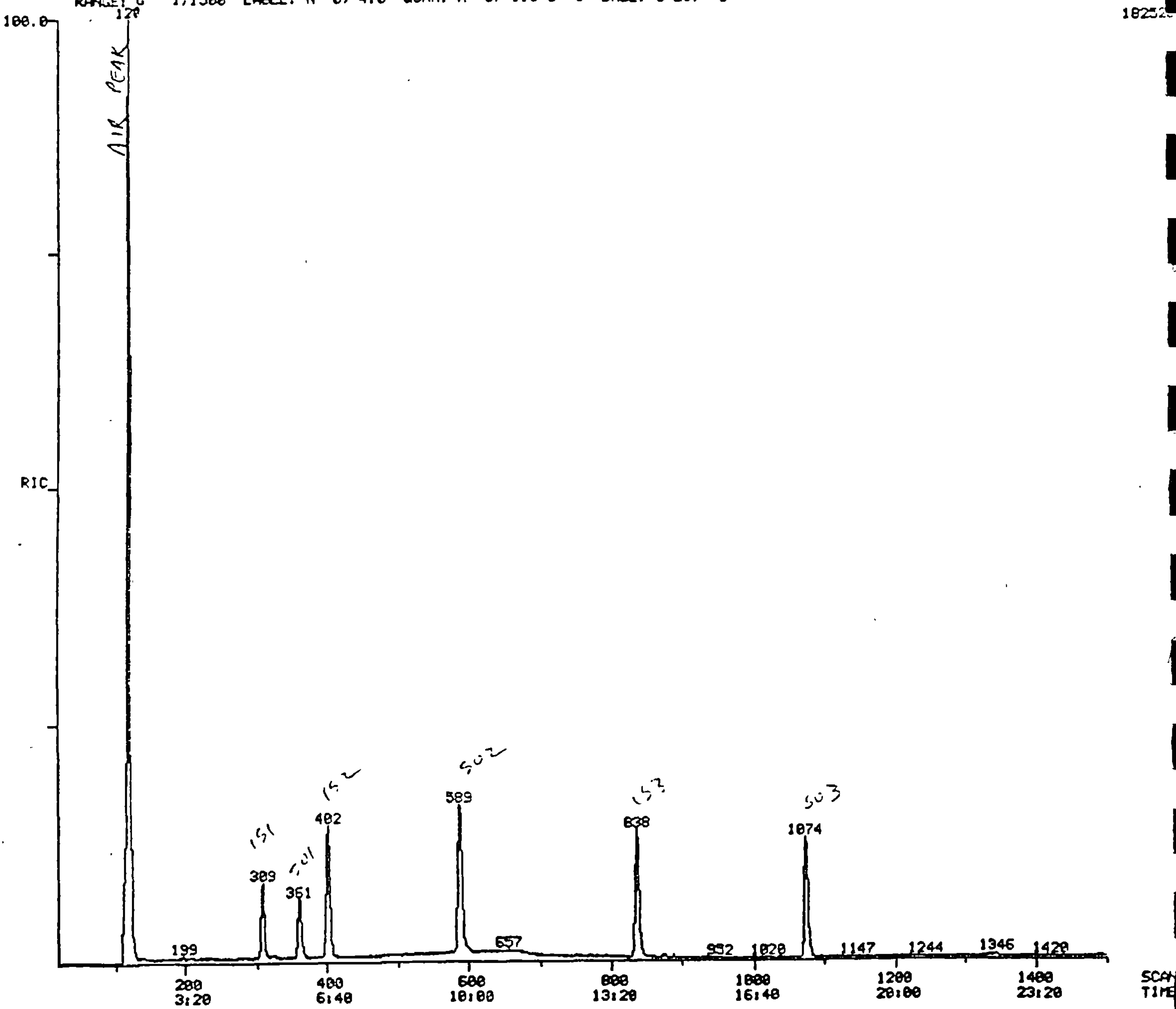
DATA: 1CU03053V01 #1 SCANS 125 TO 1500
CALI: CALTAB #2

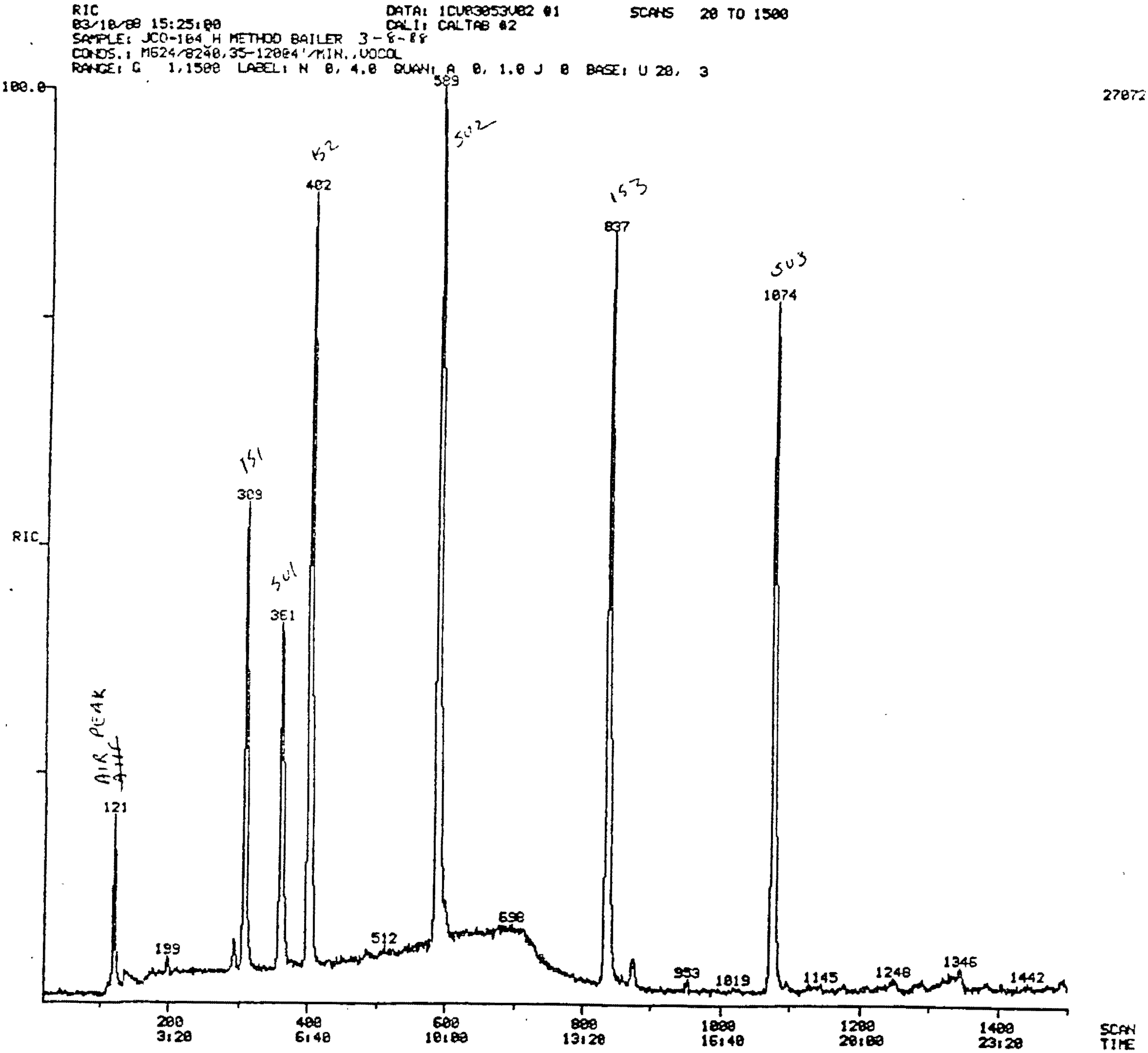


RIC
03/10/88 15:55:00
SAMPLE: JCO-104H V-10
CONDS.: M624/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

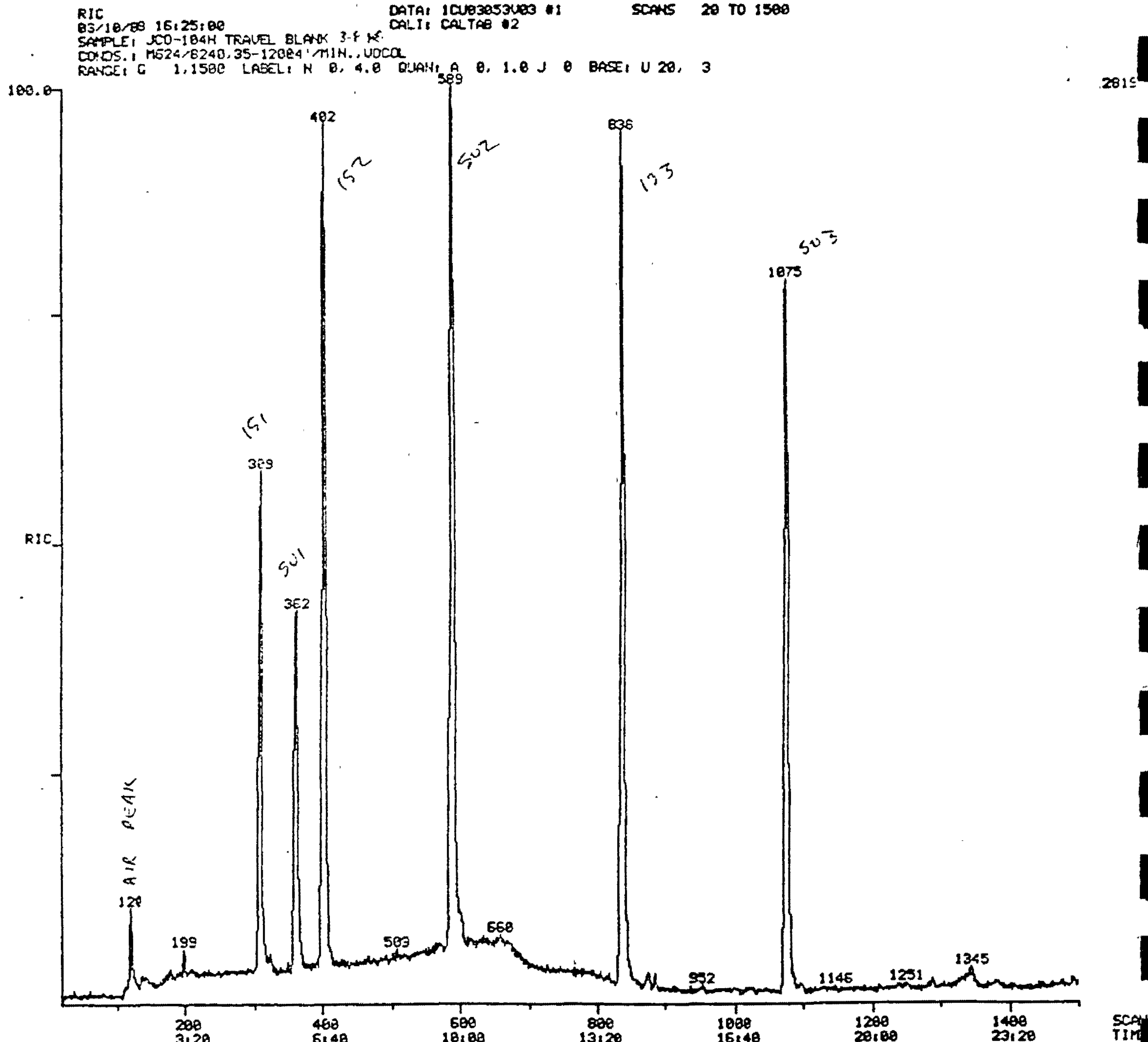
DATA: 1CU03053V04 #1
CALI: CALTAB #2

SCANS 20 TO 1500





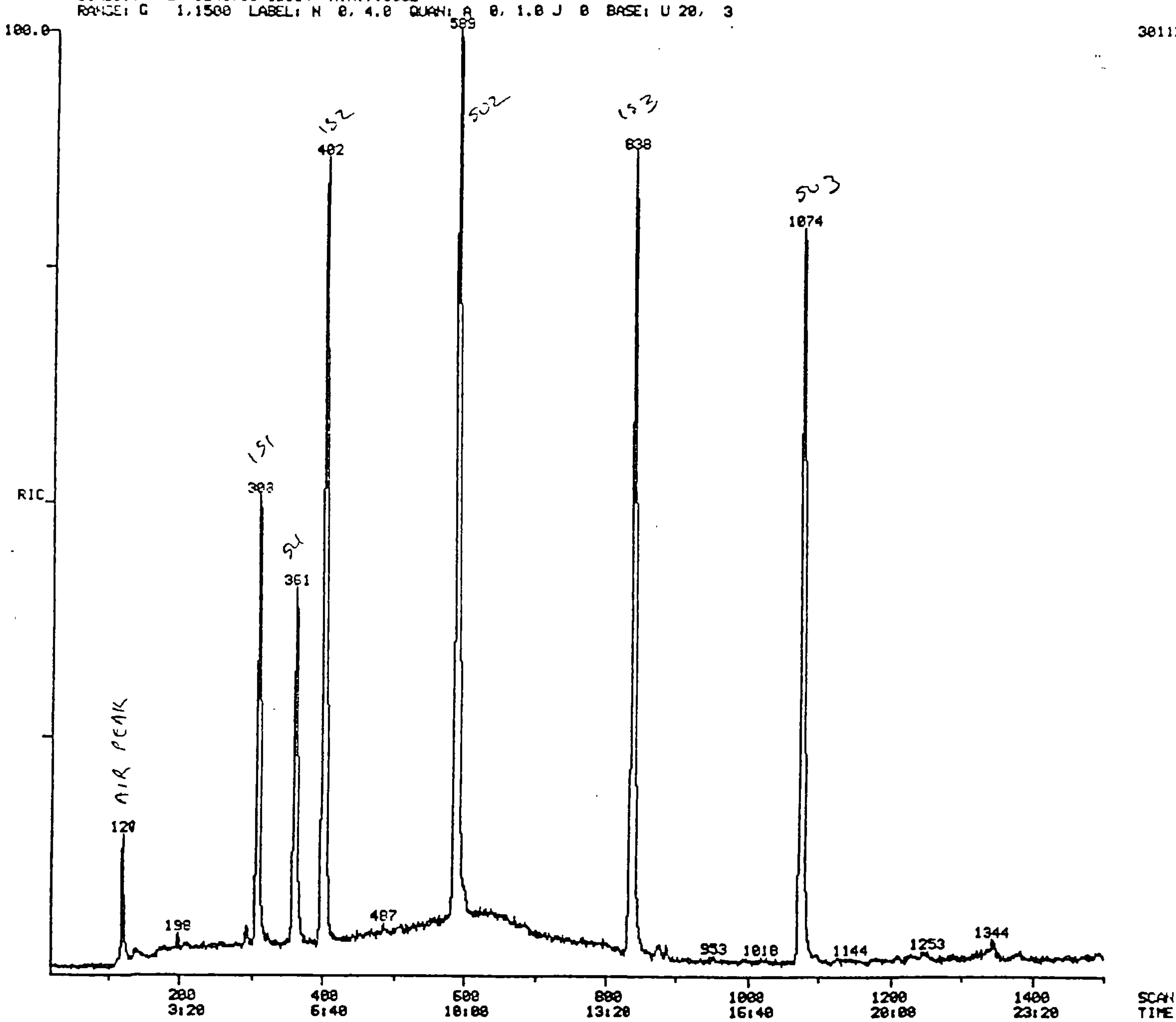
RIC
03/10/88 15:25:00
DATA: 1CV03053V02 #1
CALI: CALTAB #2
SCANS 20 TO 1500
SAMPLE: JCO-104 H METHOD BAILER 3-8-88
CONDS.: M624/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
100.0
27072.
RIC
589
SU2
IS2
402
IS3
837
SU3
1074
IS1
309
SU1
361
AIR PEAK
121
199
512
698
953
1019
1145
1248
1346
1442
200 3:20
400 6:40
600 10:00
800 13:20
1000 16:40
1200 20:00
1400 23:20
SCAN TIME



RIC
03/10/88 16:25:00
SAMPLE: JCO-104H TRAVEL BLANK 3-F
CONDS.: M624/8240,35-120@4'/MIN.,UOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: 1CU03053V03 #1
CALI: CALTAB #2
SCANS 20 TO 1500
100.0
2815
RIC
AIR PEAK
120
199
309
151
362
SU1
402
152
503
589
SU2
668
836
133
952
1075
SU3
1146
1251
1345
200 3:20
400 6:40
600 10:00
800 13:20
1000 16:40
1200 20:00
1400 23:20
SCAN TIME

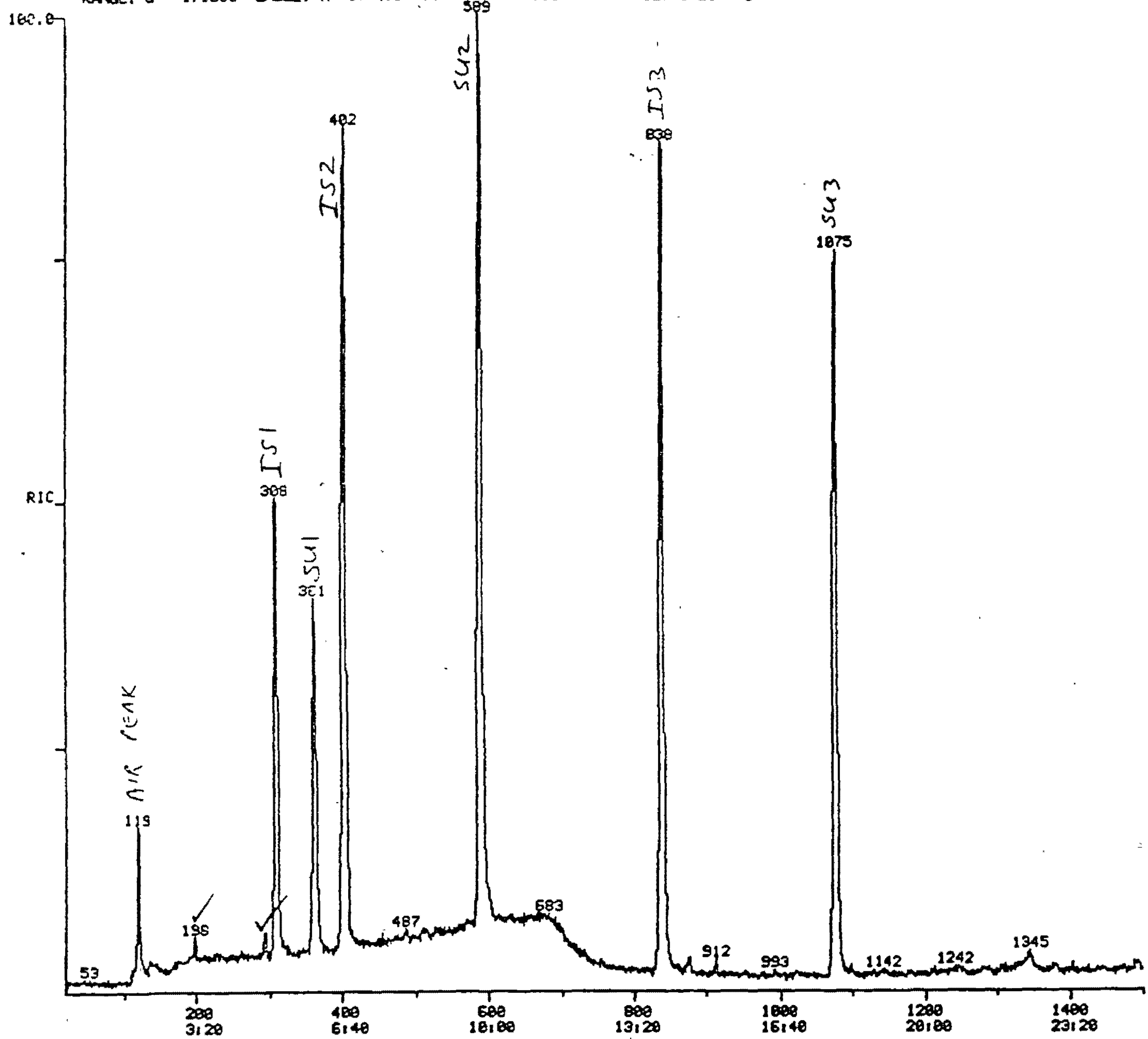
RIC
03/10/88 16:55:00
SAMPLE: JCO-104H TRAVEL BLANK 3-9-88
CONDS.: ME24/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: 1CU03053V05 #1 SCANS 20 TO 1500
CALI: CALTAB #2



METHOD BLANK

RIC
03/10/88 17:25:00 JW-104H DATA: 1CU03053V06 #1 SCANS 20 TO 1500
CALI: CALTAB #2
SAMPLE: ~~TRAVEL BLANK~~ 3-9-88
CONDS.: M524/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



2902

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Analyzed: 03/24/88
Date Reported: 03/25/88

Project: #JCO-104H

Sample Number	Sample Description
8031566	Water, V-8

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	< 0.5	1,2-Dichloropropane	< 0.5
Bromomethane	< 0.5	1,3-Dichloropropane	< 0.5
Bromodichloromethane	< 0.5	Ethylbenzene	< 0.5
Bromoform	< 0.5	Methylene chloride	< 0.5
Carbon tetrachloride	< 0.5	1,1,2,2-Tetrachloroethane	< 0.5
Chlorobenzene	< 0.5	Tetrachloroethene	< 0.5
Chloroethane	< 0.5	1,1,1-Trichloroethane	3.7
2-Chloroethylvinyl ether	< 0.5	1,1,2-Trichloroethane	< 0.5
Chloroform	< 0.5	Trichloroethene	< 0.5
Chloromethane	< 0.5	Toluene	< 0.5
Dibromochloromethane	< 0.5	Vinyl chloride	< 0.5
1,1-Dichloroethane	0.69	1,2-Dichlorobenzene	< 0.5
1,2-Dichloroethane	< 0.5	1,3-Dichlorobenzene	< 0.5
1,1-Dichloroethene	0.65	1,4-Dichlorobenzene	< 0.5
trans-1,2-Dichloroethene	< 0.5		

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Analyzed: 03/24/88
Date Reported: 03/25/88

Project: #JCO-104H

Sample Number	Sample Description
8031566	Water, V-8

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1
Methyl Isobutyl Ketone	< 1

Method of Analysis: EPA 8020

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Reported: 03/25/88
Project: #JCO-104H

Sample Number	Sample Description
8031566	Watern, V-8

ANALYSIS

Acetone, ppb	< 10
Turbidity, NTU	40

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Analyzed: 03/24/88
Date Reported: 03/25/88

Project: #JCO-104H

Sample Number	Sample Description
8031567	Water, V-9

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS & AROMATICS
results in ppb

Benzene	< 0.5
Bromomethane	< 0.5
Bromodichloromethane	< 0.5
Bromoform	< 0.5
Carbon tetrachloride	< 0.5
Chlorobenzene	< 0.5
Chloroethane	< 0.5
2-Chloroethylvinyl ether	< 0.5
Chloroform	< 0.5
Chloromethane	< 0.5
Dibromochloromethane	< 0.5
1,1-Dichloroethane	3.9
1,2-Dichloroethane	< 0.5
1,1-Dichloroethene	< 0.5
trans-1,2-Dichloroethene	< 0.5
1,2-Dichloropropane	< 0.5
1,3-Dichloropropane	< 0.5
Ethylbenzene	< 0.5
Methylene chloride	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5
Tetrachloroethene	< 0.5
1,1,1-Trichloroethane	2.2
1,1,2-Trichloroethane	< 0.5
Trichloroethene	< 0.5
Toluene	< 0.5
Vinyl chloride	< 0.5
1,2-Dichlorobenzene	< 0.5
1,3-Dichlorobenzene	< 0.5
1,4-Dichlorobenzene	< 0.5

Method of Analysis: EPA 8010/8020

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

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Project: #JCO-104H

Sample Number	Sample Description
8031567	Water, V-9

NON-PRIORITY POLLUTANTS
PURGEABLE AROMATICS
results in ppb

Xylene	< 1
Methyl Ethyl Ketone	< 1
Methyl Isobutyl Ketone	< 1

Method of Analysis: EPA 8020

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Date Reported: 03/25/88
Project: #JCO-104H

Sample Number	Sample Description
8031567	Water, V-9

ANALYSIS

Acetone, ppb	< 10
Turbidity, NTU	130

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Date Received: 03/22/88
Date Analyzed: 03/24/88
Date Reported: 03/25/88

Project: #JCO-104H

Sample Number	Sample Description
8031568	Water, V-10

PRIORITY POLLUTANTS

PURGEABLE HALOCARBONS
results in ppb

Bromomethane...............	< 0.5	1,2-Dichloropropane...........	< 0.5
Bromodichloromethane.......	< 0.5	1,3-Dichloropropene...........	< 0.5
Bromoform..................	< 0.5	Methylene chloride............	< 0.5
Carbon Tetrachloride.......	< 0.5	1,1,2,2-Tetrachloroethane.....	< 0.5
Chloroethane...............	< 0.5	Tetrachloroethene.............	< 0.5
2-Chloroethylvinyl ether...	< 0.5	1,1,1-Trichloroethane.........	0.96
Chloroform.................	< 0.5	1,1,2-Trichloroethane.........	< 0.5
Chloromethane..............	< 0.5	Trichloroethene...............	< 0.5
Dibromochloromethane.......	< 0.5	Vinyl chloride................	< 0.5
1,1-Dichloroethane.........	< 0.5	1,2-Dichlorobenzene...........	< 0.5
1,2-Dichloroethane.........	< 0.5	1,3-Dichlorobenzene...........	< 0.5
1,1-Dichloroethene.........	< 0.5	1,4-Dichlorobenzene...........	< 0.5
trans-1,2-Dichloroethene...	< 0.5		

Method of Analysis: EPA 8010

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Date Sampled: 03/22/88
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Project: #JCO-104H

TOTAL PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Detection Limit ppb	(Diesel) High Boiling Point Hydrocarbons ppb
	Water,		
8031568	V-10	50	< 50

Method of Analysis: EPA 3510/8015

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Project: #JCO-104H

BTX DISTINCTION

Sample Number	Sample Description
8031568	Water, V-10

	Detection Limit ppb	Sample Results ppb
Benzene	0.5	< 0.5
Toluene	0.5	< 0.5
Xylenes	0.5	< 0.5

Method of Analysis: EPA 5030/602

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Date Received: 03/22/88
Date Reported: 03/25/88
Project: #JCO-104H

Sample Number	Sample Description
8031568	Water, V-10

ANALYSIS

Turbidity, NTU	660

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Date Sampled: 03/22/88
Date Received: 03/22/88
Date Reported: 03/25/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: M. Giles
Date of Analysis: 3/24/88
Method of Analysis: EPA 8010/8020
Detection Limit: 0.5
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8031568	111TCA	0.96	0.74	13

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8031567	111TCA	2.2	2.0	4.1	95

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Scot Cocanour

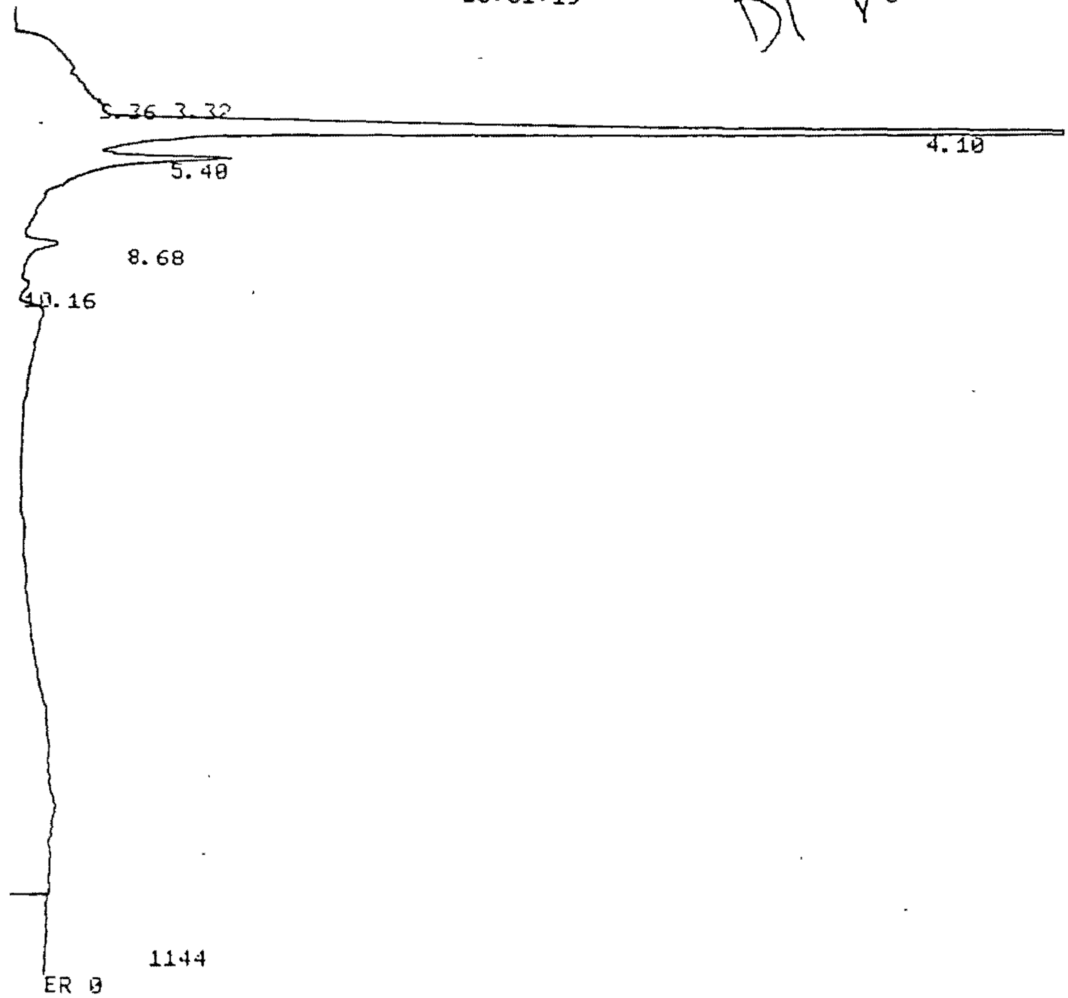
Arthur G. Burton
Laboratory Director

1	0.	19.84	23128 01
TOTALS	0.		23128

CHANNEL A INJECT 15:51:19

DI Blank

070



HALL 15:51:19 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 16 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	3.32	464123 02	
2	0.	3.36	2489 03	
3	0.	4.1	6545925 08	
4	0.	5.4	624568 05	
5	0.	8.68	163105 01	
6	0.	10.16	44799 03	
TOTALS	0.		7845009	

INPUT OVERRANGE AT RT= 5.38

071

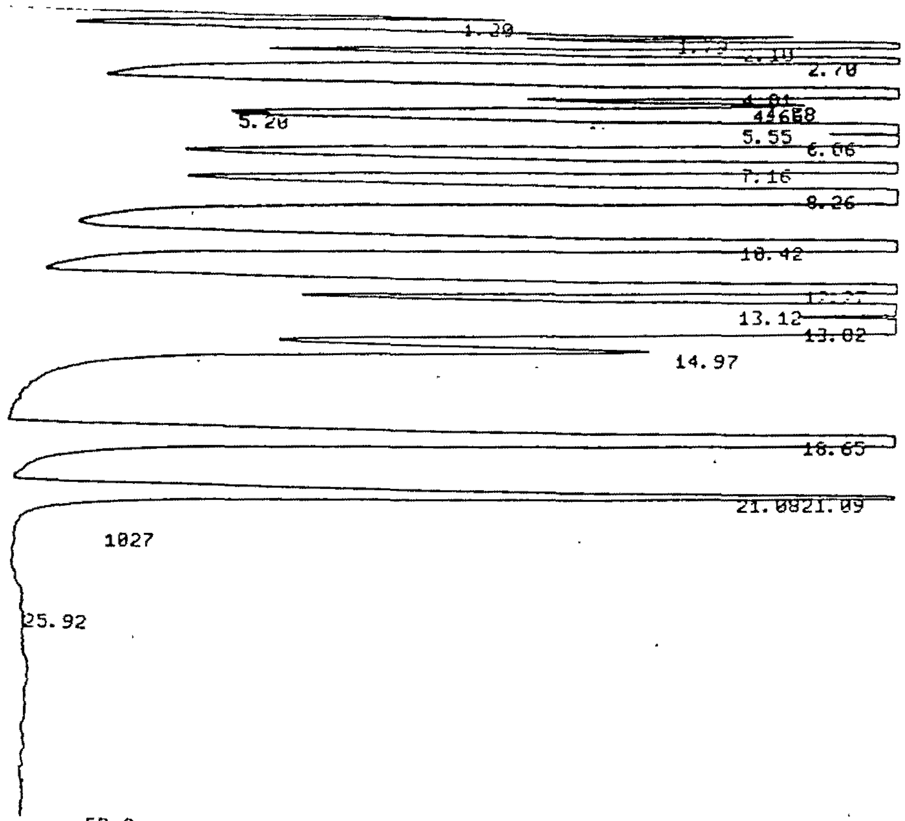
PID 15:51:19 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 5 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
TOTALS	0.			

CHANNEL A INJECT 16:37:06



074

HALL 18:05:07 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 19 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	1.2	2137932 02	
2	0.	1.79	3001376 02	
3	0.	2.1	8418932 02	
4	0.	2.7	10159507 02	
5	0.	4.01	19730943 02	
6	0.	4.58	2476282 02	
7	0.	4.66	3870282 02	
8	0.	5.2	450562 02	
9	0.	5.55	13968850 02	
10	0.	6.06	17539326 02	
11	0.	7.16	16956552 02	
12	0.	8.26	31691026 03	
13	0.	10.42	19163859 05	
14	0.	12.27	12954797 06	
15	0.	13.12	17161546 06	
16	0.	13.82	23935950 06	
17	0.	14.97	6167616 07	
18	0.	18.65	20355173 01	
19	0.	21.08	2603766 02	
20	0.	21.09	4336822 03	
21	0.	25.92	701809 01	
TOTALS	0.		237781808	

075

INPUT OVERRANGE AT RT= 5.23

PID 18:05:07 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 8 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	5.97	62116 01	
2	0.	8.05	50216 01	
3	0.	9.94	25711 01	
4	0.	10.3	112771 01	
5	0.	13.	74869 01	
6	0.	14.08	41935 01	
7	0.	18.52	69009 01	
8	0.	19.84	45337 01	
9	0.	20.94	162634 01	
10	0.	25.42	469907 01	

5ppb Purge A & C

PID 23:05.37 CH= "B" PS= 1.

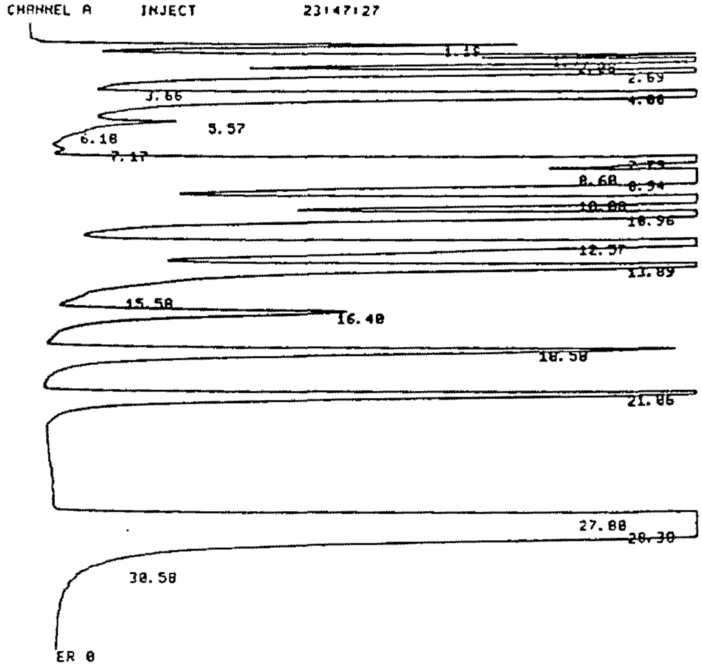
FILE 1. METHOD 5. RUN 15 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.62	181287 01	
TOTALS	0.		181287	

5ppb B, C
DCB's
Aromatics

CHANNEL A INJECT 23:47:27



085

HALL 23:47:27 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 27 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	1.18	2575486	02	
2	0.	1.77	3422314	02	
3	0.	2.08	9132683	02	
4	0.	2.69	10001204	02	
5	0.	3.66	180222	02	
6	0.	4.	22595100	08	
7	0.	5.57	525706	05	
8	0.	6.18	28655	07	
9	0.	7.17	65430	05	
10	0.	7.79	15481135	06	
11	0.	8.6	11995404	06	
12	0.	8.94	10431518	06	
13	0.	10.08	10871113	06	
14	0.	10.96	13832579	06	
15	0.	12.57	16866074	06	
16	0.	13.89	11290059	06	
17	0.	15.58	221976	06	
18	0.	16.4	3445170	07	
19	0.	18.58	6593030	01	
20	0.	21.06	7470867	01	
21	0.	27.8	16036773	02	
22	0.	28.30	56619623	08	
23	0.	30.58	740	05	
TOTALS	0.		245698861		

INPUT OVERRANGE AT RT= 5.58

PID 23:47:27 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 16 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.46	3476	01	
2	0.	7.66	156130	02	
3	0.	8.04	115964	03	
4	0.	8.94	32740	01	
5	0.	10.29	154092	01	
6	0.	11.06	33339	01	
7	0.	12.56	105764	01	
8	0.	13.40	424704	01	
9	0.	14.93	243325	01	
10	0.	19.01	027225	01	
11	0.	20.93	177727	01	
12	0.	22.60	414045	01	
13	0.	24.46	50924	02	
14	0.	25.42	172116	02	
15	0.	25.9	116028	03	
16	0.	27.65	324296	02	
17	0.	28.72	607214	03	
18	0.	31.55	752016	01	
TOTALS	0.		4713515		

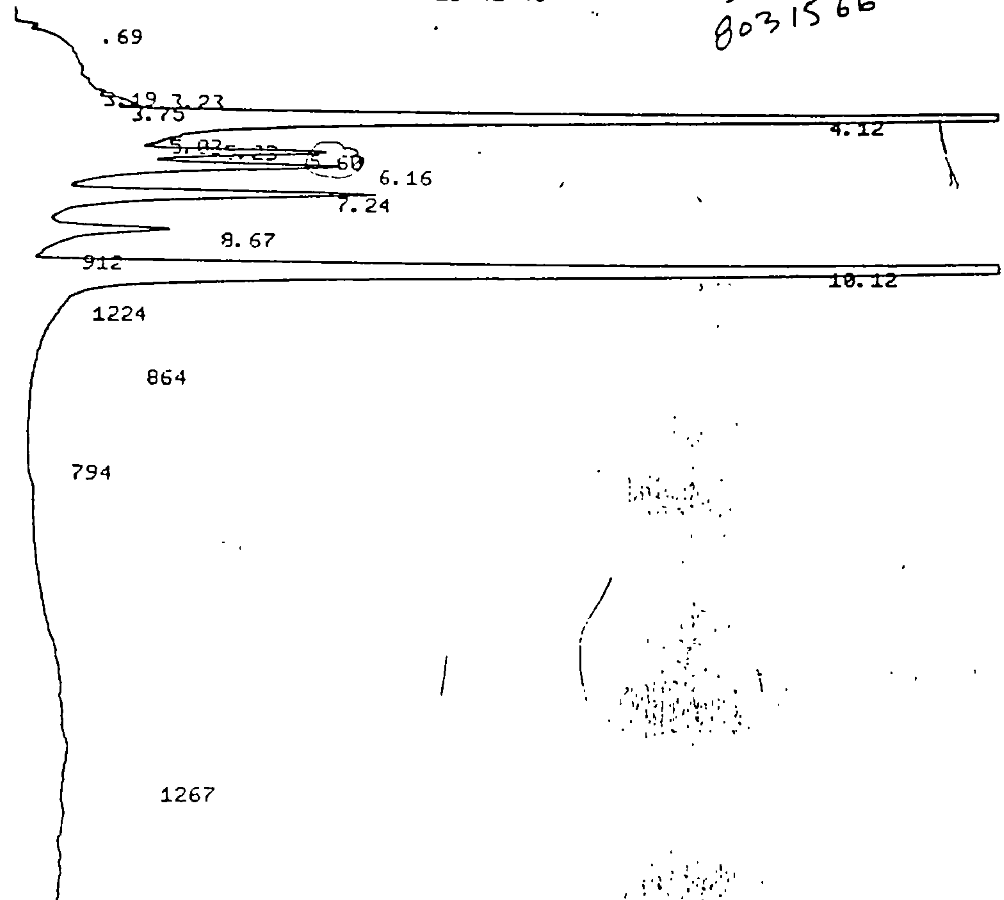
086

1. 0. 0.

CHANNEL A INJECT 13:42:48

5 ml
8031566

066



ER 0

HALL 13:42:48 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 13 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.69	80128 02	
2	0.	3.19	2022276 02	
3	0.	3.23	309699 02	
4	0.	3.75	696835 02	
5	0.	4.12	10574251 02	
6	0.	5.03	354510 02	
7	0.	5.23	448490 02	
8	0.	5.6	1727202 02	
9	0.	6.16	2280638 02	
10	0.	7.24	2347790 02	
11	0.	8.67	1013781 02	
12	0.	10.12	13462734 03	
TOTALS	0.		35318334	

067

INPUT OVERRANGE AT RT= 5.54

PID 13:42:49 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 2 INDEX 1

ANALYST: MRG

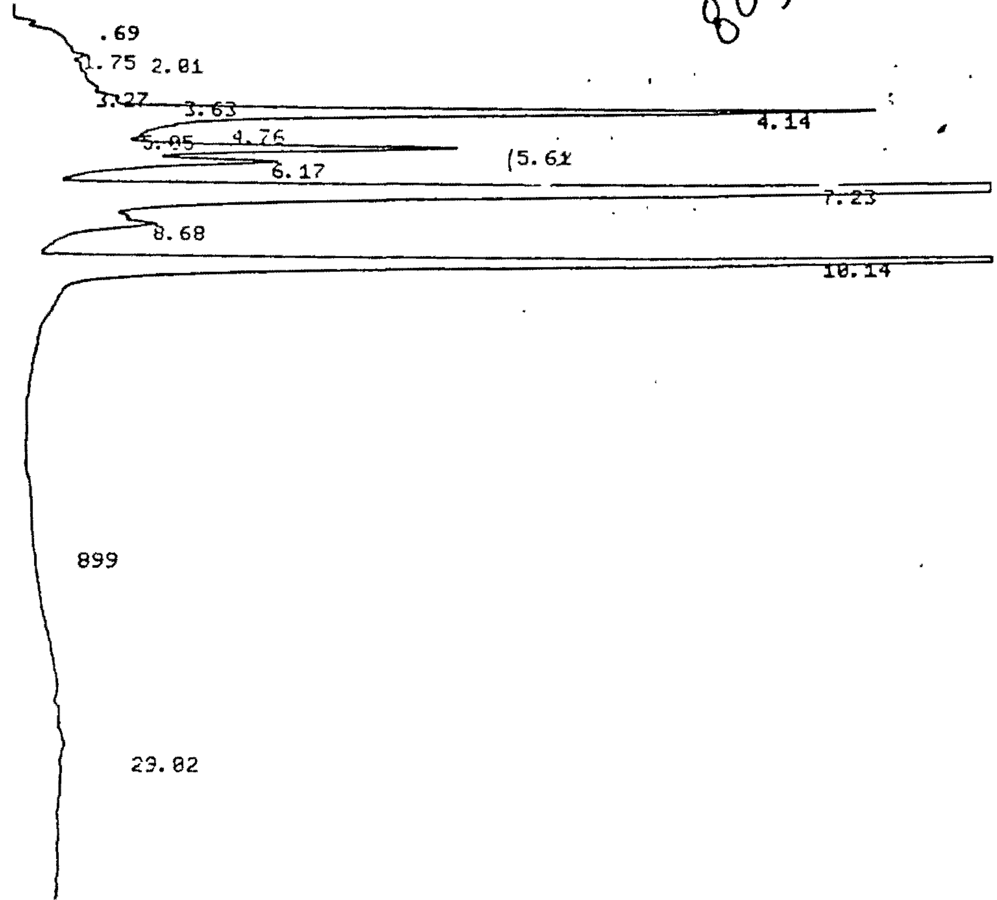
NAME	PPB	RT	AREA BC	RF
1	0.	0.6	202677 01	
TOTALS	0.		202677	

5 ml
8031567

CHANNEL A INJECT 14:26:13

CHANNEL A INJECT 14:26:13

5ml 8031567



HALL 14:26:13 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 14 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.69	50615	02	
2	0.	1.75	385199	02	
3	0.	2.01	117211	02	
4	0.	3.27	165498	02	
5	0.	3.63	91585	02	
6	0.	4.14	3789157	02	
7	0.	4.76	116198	02	
8	0.	5.05	5589	03	
9	0.	5.61	1492396	02	
10	0.	6.17	904599	03	
11	0.	7.23	13222277	08	
12	0.	8.68	338900	05	
13	0.	10.14	7804349	01	
14	0.	29.02	223644	01	
TOTALS	0.		28707217		

INPUT OVERRANGE AT RT= 5.57

PID 14:26:13 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 3 INDEX 1

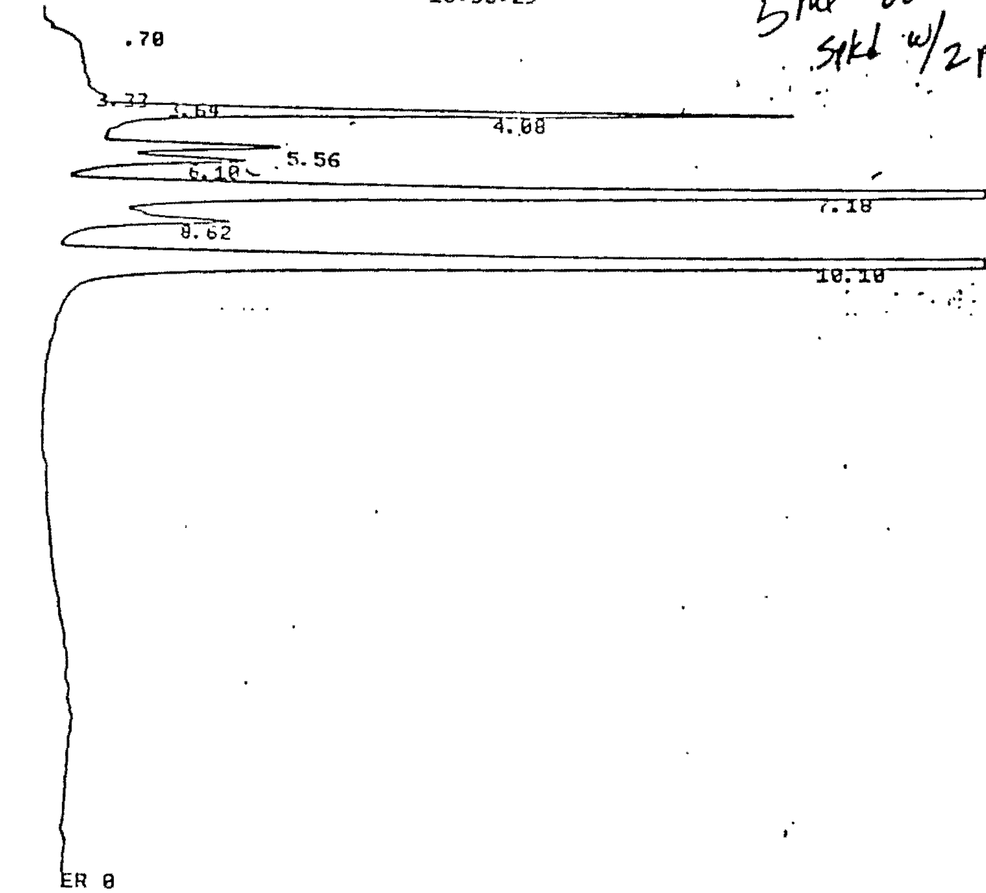
ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.6	248718	01	
TOTALS	0.		248718		

50ml 8.1511

CHANNEL A INJECT 15:09:05

CHANNEL A   INJECT   10:35:29



112

HALL   10:35:29   CH= "A"   PS= 1.

FILE 1.   METHOD 5.   RUN 46   INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.7	32771 02	
2	0.	3.33	1300989 02	
3	0.	3.64	379508 02	
4	0.	4.08	5730132 08	
5	0.	5.56	910166 06	
6	0.	6.1	877760 06	
7	0.	7.18	12435374 06	
8	0.	8.62	1405389 06	
9	0.	10.1	14765190 07	
TOTALS	0.		37837279	

INPUT OVERRANGE AT RT= 5.49

PID   10:35:29   CH= "B"   PS= 1.

FILE 1.   METHOD 5.   RUN 35   INDEX 1

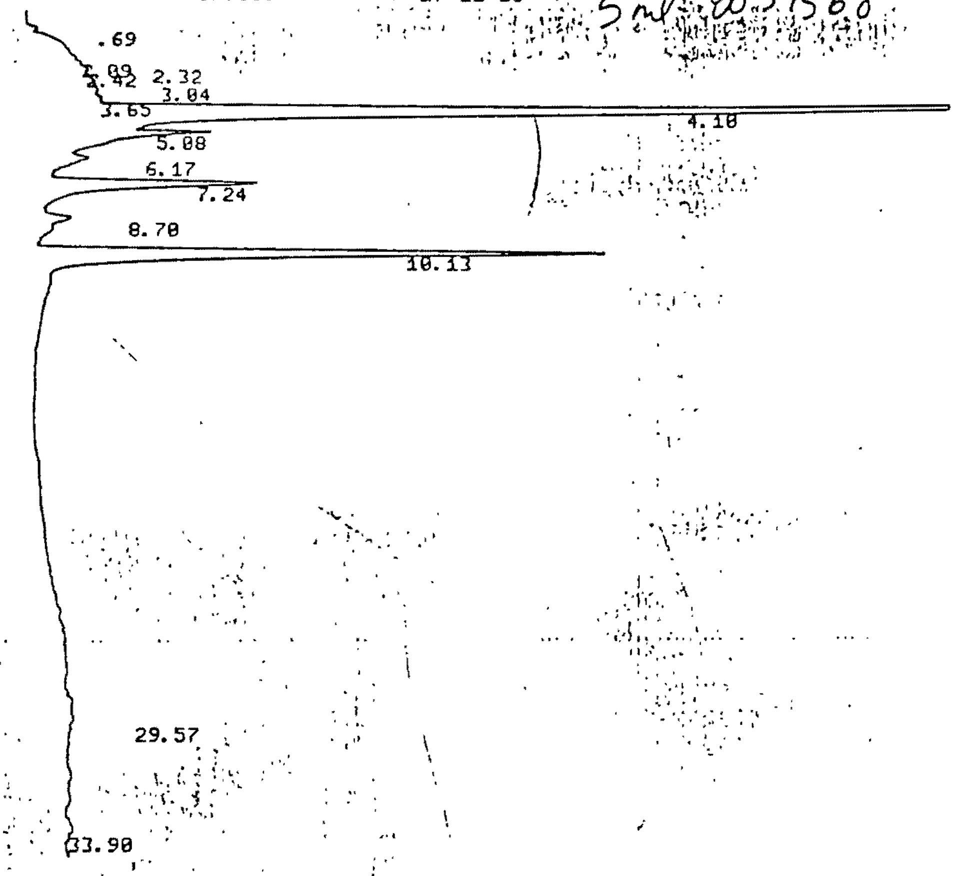
ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.6	238358 01	
2	0.	0.99	20902 01	
3	0.	16.05	45675 01	
4	0.	19.04	20202 01	
5	0.	22.72	366454 02	
6	0.	25.44	517236 03	
TOTALS	0.		1208907	

113

NAME	PPB	RT	AREA BC	RF
TOTALS	0.			

CHANNEL A INJECT 17:21:10 5ml 8031568



HALL 17:21:10 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 18 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.69	42723 02	
2	0.	2.09	713911 02	
3	0.	2.32	193963 02	
4	0.	2.42	336376 02	
5	0.	3.04	944312 02	
6	0.	3.65	321810 02	
7	0.	4.1	8048346 02	
8	0.	5.08	1509497 02	
9	0.	6.17	554989 02	
10	0.	7.24	1565330 02	
11	0.	8.7	350930 02	
12	0.	10.13	3465279 03	
13	0.	29.57	84147 01	
14	0.	33.9	61979 01	
TOTALS	0.		18193592	

INPUT OVERRANGE AT RT= 5.07

PID 17:21:11 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 7 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA BC	RF
1	0.	0.6	235296 01	
TOTALS	0.		235296	

5ppb AC

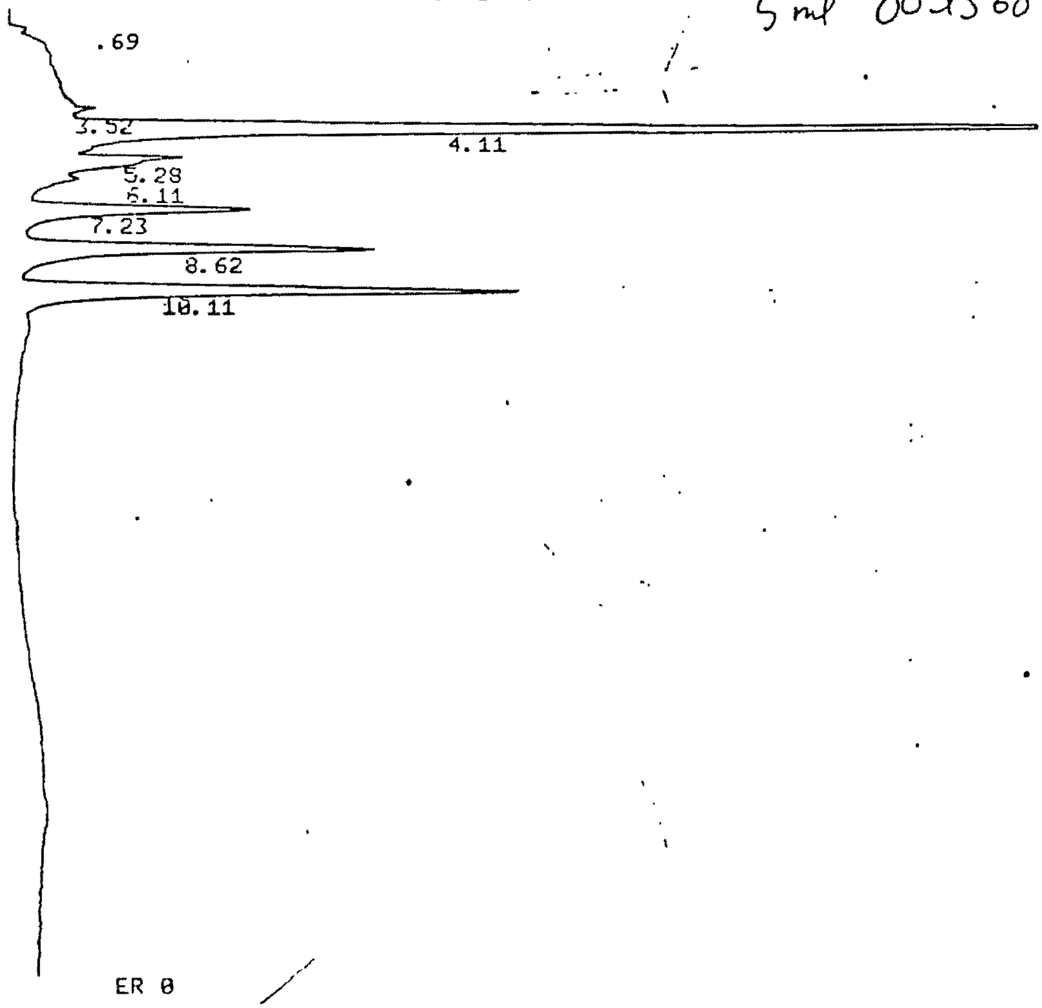
CHANNEL A INJECT 18:05:07

073

TOTALS 0. 274090

#9
5ml 8031568

CHANNEL A INJECT 06:36:54



097

HALL 06:36:54 CH= "A" PS= 1.

FILE 1. METHOD 5. RUN 36 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.69	33155	03	
2	0.	3.52	502947	02	
3	0.	4.11	6279501	02	
4	0.	5.28	1021663	02	
5	0.	6.11	221404	02	
6	0.	7.23	1140010	08	
7	0.	8.62	1884795	06	
8	0.	10.11	2658014	07	
TOTALS	0.		13741489		

INPUT OVERRANGE AT RT= 5.33

PID 06:36:54 CH= "B" PS= 1.

FILE 1. METHOD 5. RUN 25 INDEX 1

ANALYST: MRG

NAME	PPB	RT	AREA	BC	RF
1	0.	0.51	26132	02	
2	0.	0.61	250166	03	
3	0.	18.88	41818	01	

098

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Date Sampled: 03/22/88
Date Received: 03/22/88
Date Reported: 03/25/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: G. Brock
Date of Analysis: 3/24/88
Method of Analysis: Alcohols by G.C.
Detection Limit: 10
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8031566	Acetone	< 10	< 10	0.0

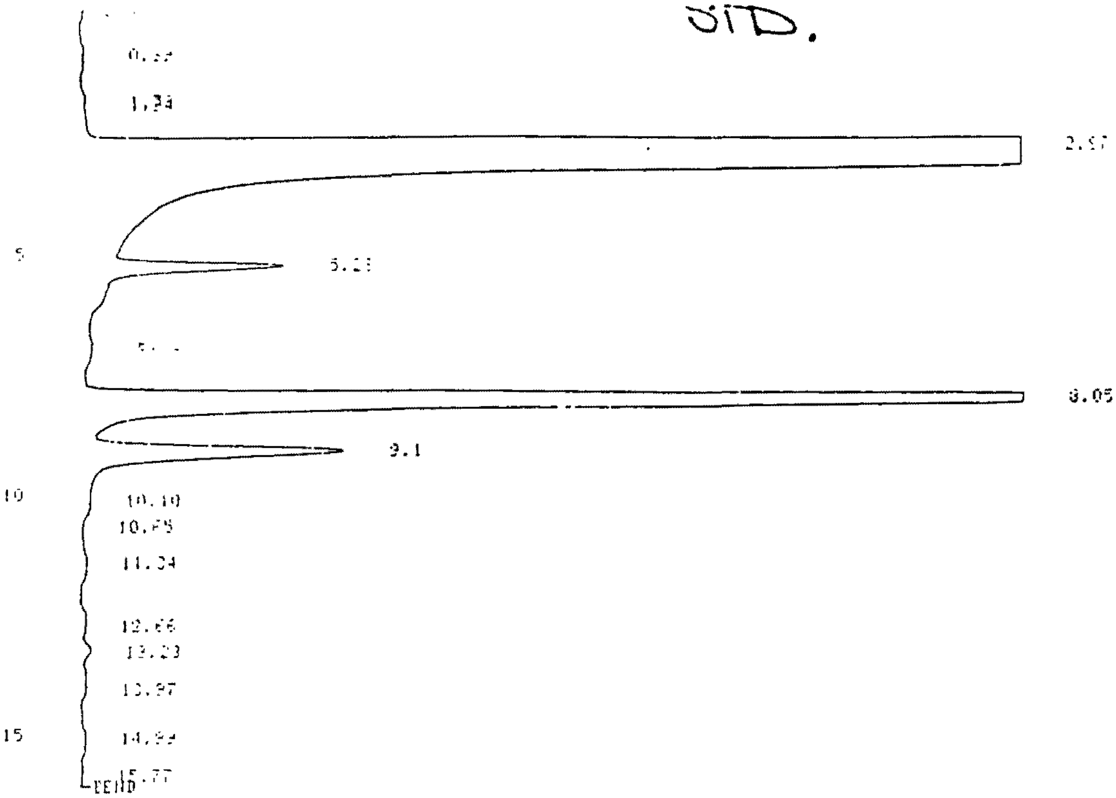
Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8031566	Acetone	< 10	200	205	103

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

STD.



RUN 4 9:42 88/03/24

METHOD 3 MODIFIED CALCULATION: %

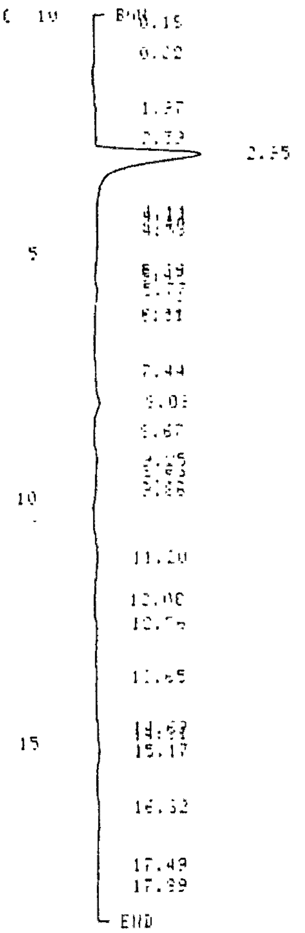
RT	AREA	BC	AREA %
0.33	0.9659	V	0.0521
1.79	0.4215	T	0.0[illegible]
1.34	0.1521	T	0.00[illegible]
2.57	1625.5743	T	87.[illegible]
5.23	25.2283	T	1.3[illegible]0
6.[illegible]	2.674[illegible]	T	0.1444
8.05	157.9362	T	[illegible].5359
9.11	31.1696	T	1.6840
10.10	1.2314	T	0.0662
10.65	0.0319	V	0.0017
11.34	0.8178	V	0.0441
12.66	0.9104	T	0.0522
13.23	1.2330	T	0.0665
13.97	1.2213	T	0.066[illegible]
14.99	0.9261	T	0.0500
15.77	0.1139		0.0061

16 PEAKS . AREA HT REJECT

Smls # 8031566

RUN 1 11:02 88/03/24

METHOD 5 MODIFIED



RUN 1 11:02 88/03/24

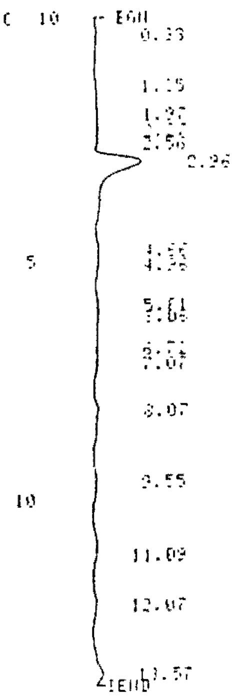
METHOD 5 MODIFIED CALCULATION: %

RT	AREA	BC	AREA %
0.13	0.0475	U	0.1266
0.82	0.2894	U	0.8326
1.37	0.0875	U	0.2518
2.52	0.1236	U	0.3555
2.95	26.6473	U	76.6474
4.14	0.0230	U	0.0661
4.22	0.0090	U	0.0260
4.40	0.0115	U	0.0341
4.53	0.1632	U	0.4696
5.33	0.0204	V	0.0587
5.47	0.0116	U	0.0334
5.77	0.3943	U	1.1344
6.13	0.0131	U	0.0377
6.31	0.2745	U	0.7897
7.44	0.0316	U	0.0908
8.08	1.3125	U	3.7754
8.67	0.0341	U	0.0983
9.25	0.5824	U	1.6752
9.53	0.0085	U	0.0244
9.88	0.3713	U	1.0683
11.20	2.9513	U	8.4937
12.08	0.0069	U	0.0200
12.56	1.2076	U	3.4735
13.65	0.1404		0.4039

24 PEAKS AREA/HT REJECT

METHOD 5 MODIFIED

Gmls # 8031567



RUN 2 11:51 88/03/24

METHOD 5 MODIFIED CALCULATION: %

RT	AREA	BC	AREA %
0.33	0.7034	U	2.7645
1.15	0.2077	U	0.8105
1.27	0.0360	U	0.1416
2.27	0.0690	U	0.2746
2.56	0.1067	U	0.4242
2.96	14.5120	U	57.7365
4.66	0.1632	U	0.6270
4.95	0.2044	U	0.8144
6.06	0.0245	U	0.2690
6.72	0.0256	U	0.1002
7.07	0.4047	U	1.5724
8.07	2.1947	U	8.5603
9.55	1.4004	U	5.4646
11.09	1.6133	U	6.2950
12.07	1.2153	U	4.8220
13.57	2.2597		8.9345

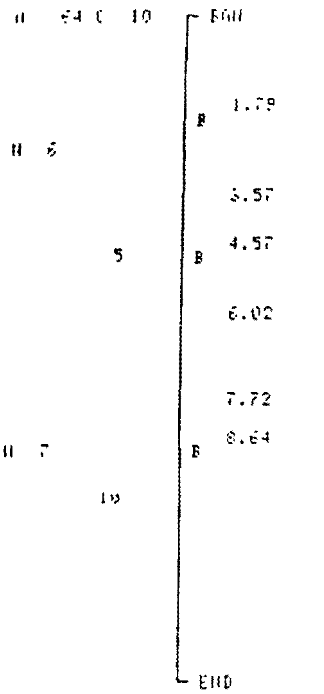
16 PEAKS > AREA/HT REJECT

21 PEAKS > AREA/HT REJECT

5mls # 8031566 (Dup).

RUN 4 12:42 88/03/24

METHOD 5 MODIFIED



RUN 4 12:49 88/03/24

METHOD 5 MODIFIED CALCULATION: %

RT	AREA	BC	AREA %
1.79	0.0202		9.9383
3.57	0.0405	V	20.0017
4.57	0.0266		13.1221
6.02	0.0617	V	20.4060
7.72	0.0299	V	14.7209
8.64	0.0238		11.7464

6 PEAKS > AREA/HT REJECT

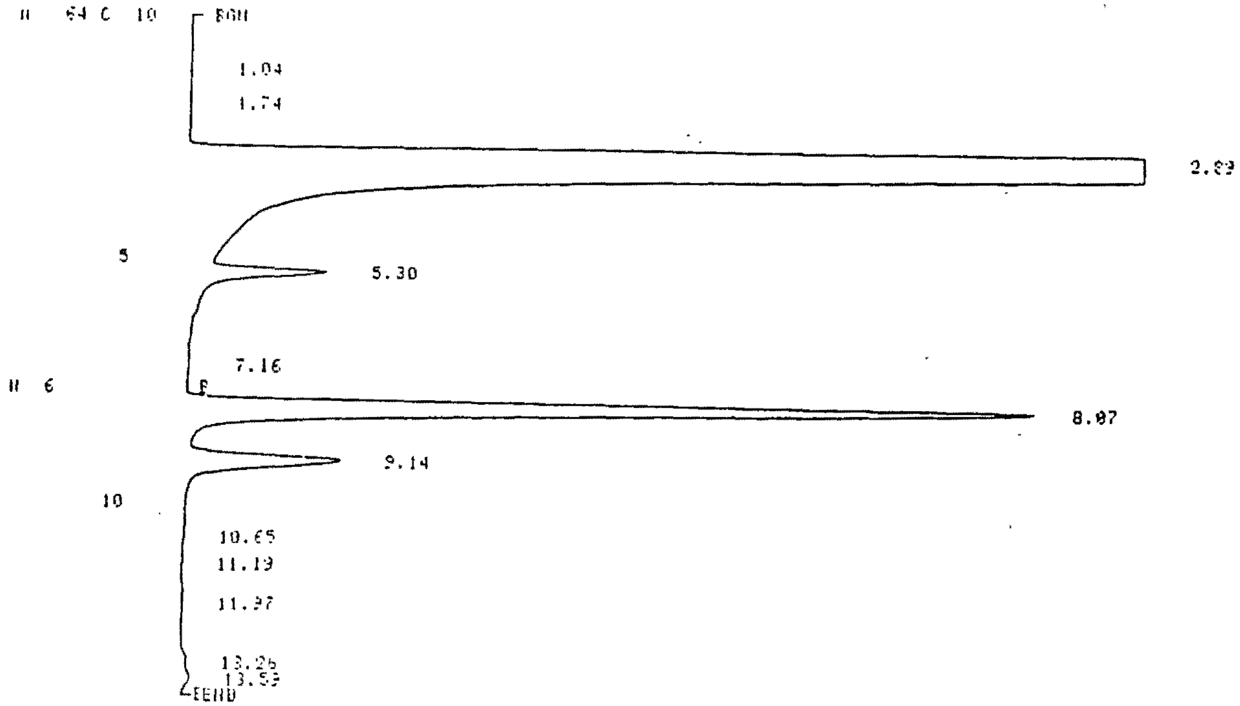
21 PEAKS > AREA/HT REJECT

5mls # 8031566 xsp.

RUN 6 13:59 88/03/24

METHOD 5 MODIFIED

N 64 C 10



RUN 6 13:59 88/03/24

METHOD 5 MODIFIED CALCULATION: %

RT	AREA	BC	AREA %
1.04	0.1687	V	0.0066
1.74	0.1624	V	0.0064
2.89	2331.7635	V	91.6703
5.30	15.3502	V	0.6034
7.16	0.2961		0.0117
8.07	162.2553	V	6.3788
9.14	31.1535	V	1.2243
10.65	0.2955	V	0.0117
11.13	0.1031	V	0.0040
11.97	0.8222	V	0.0323
13.25	0.0663	V	0.0026
13.59	1.1762		0.0463

12 PEAKS > AREA/HT REJECT

SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Reported: 03/25/88

Project: #JCO-104H

Q.C. DATA REPORT

Analyst: G. Brock
Date of Analysis: 3/24/88
Method of Analysis: EPA 3510/8015
Detection Limit: 50
Units: ppb

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8031568	Diesel	< 50	< 50	0.0

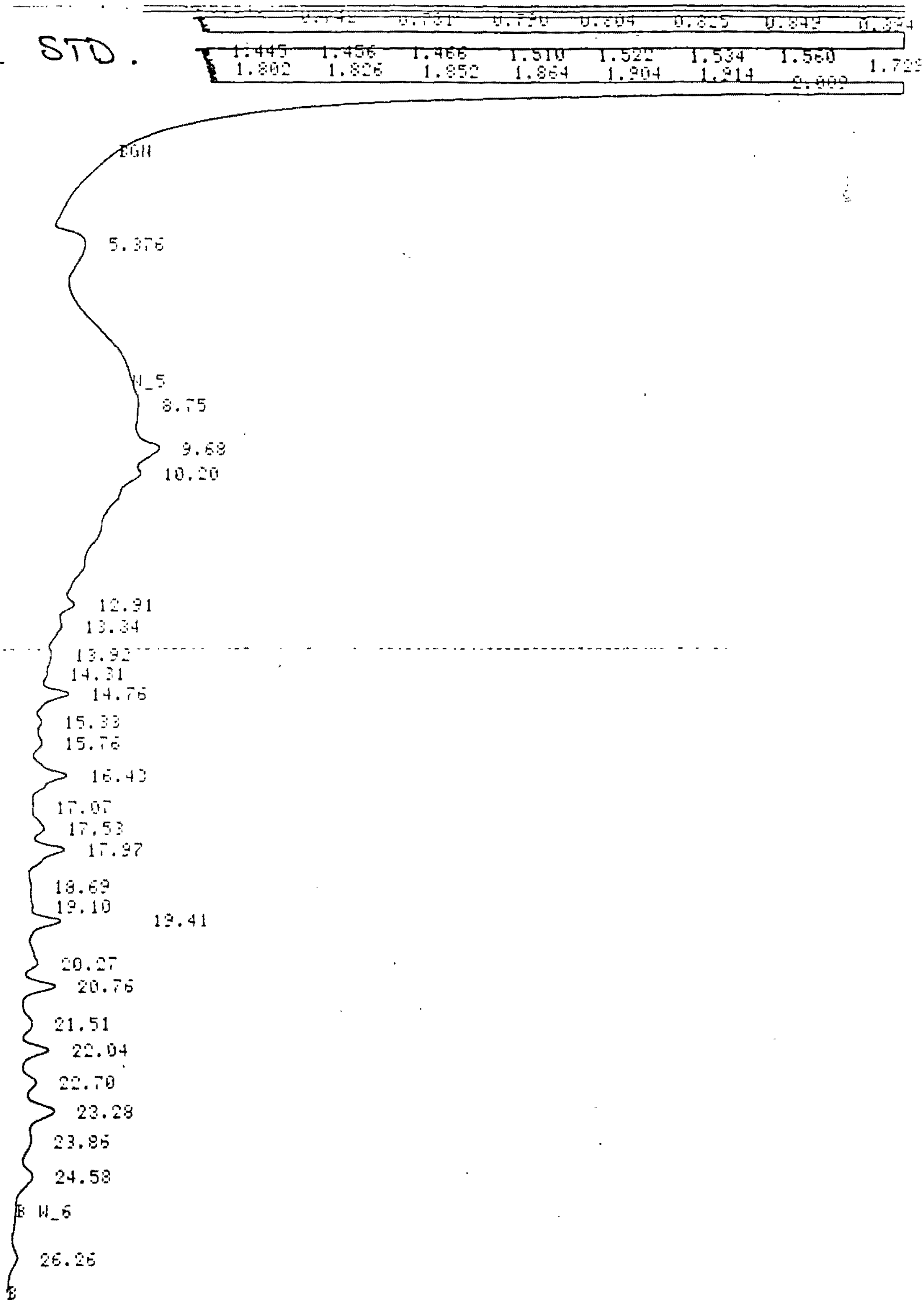
Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8031568	Diesel	< 50	2,000	1790	89.5

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

DIESEL STD.



FILE 192 RUN 8 STARTED 00:34.4 80/01/11 HIGH BOILERS
% METHOD 1 DIESELS LAST EDITED 20:06.0 80/01/10

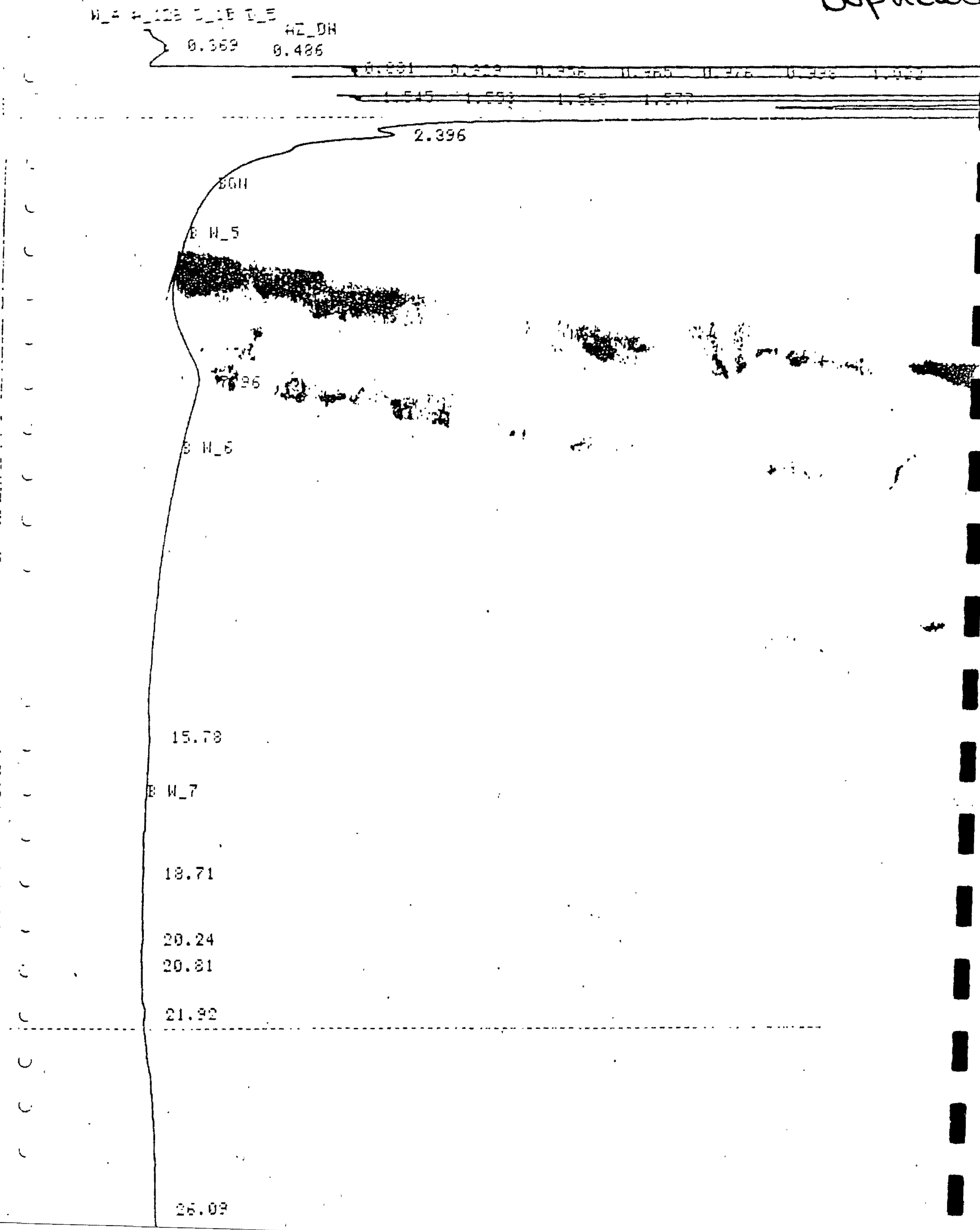
RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT
5.376	1329487	34.2342	U	15.6656	7.1543
8.75	164197	5.6431	U	1.9348	1.1793

11.892

803156

FILE 186 RUN 4 STARTED 22:18.5 80/01/18 HIGH BOILERS
% METHOD 1 DIESELS LAST EDITED 20:56.0 80/01/18

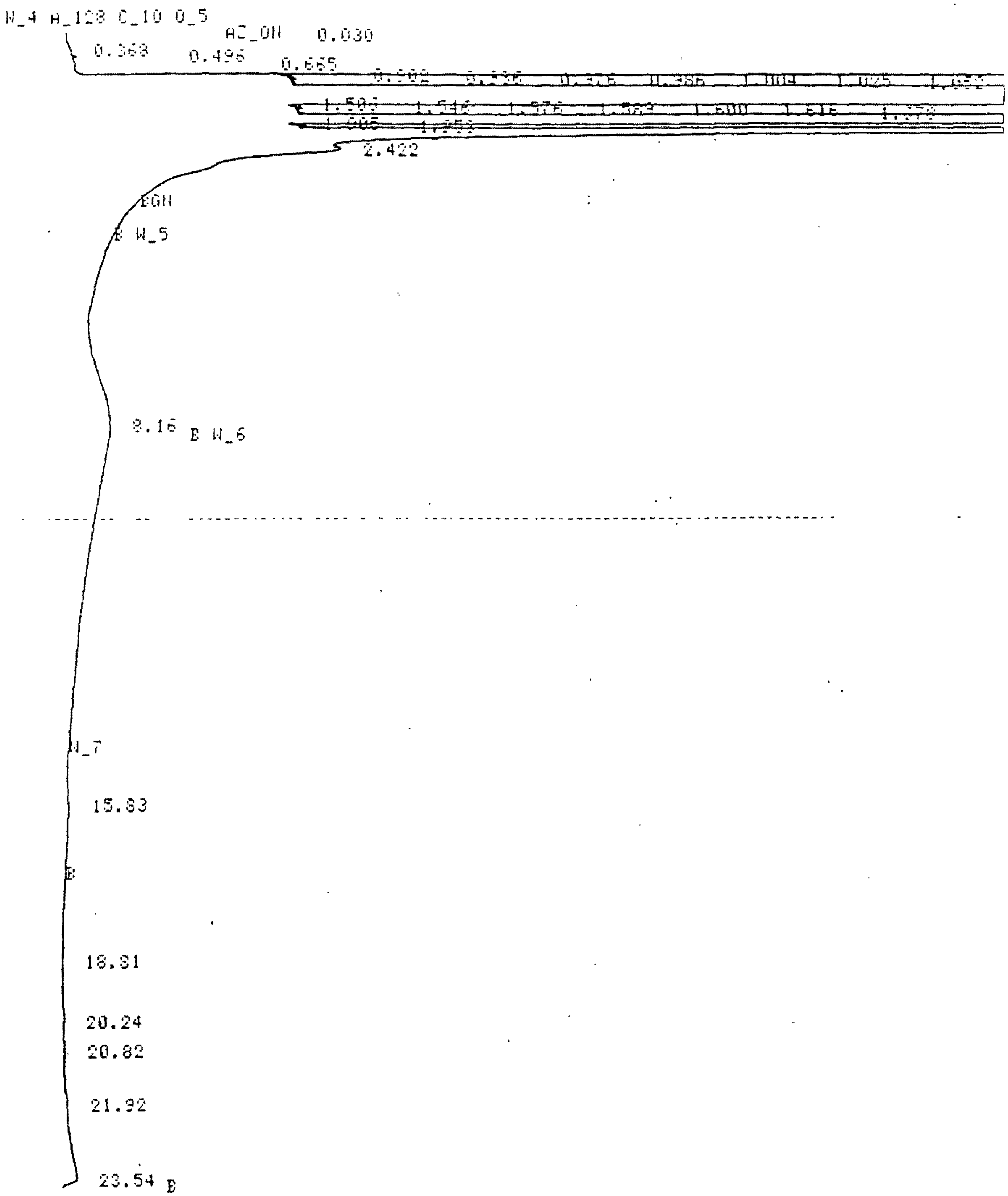
3? & 8039
Duplicate



3) # 80315

FILE 191   RUN 7   STARTED 00:08.2 80/01/11   HIGH BOILERS
% METHOD 1 DIESELS   LAST EDITED 20:06.0 80/01/10

80315668



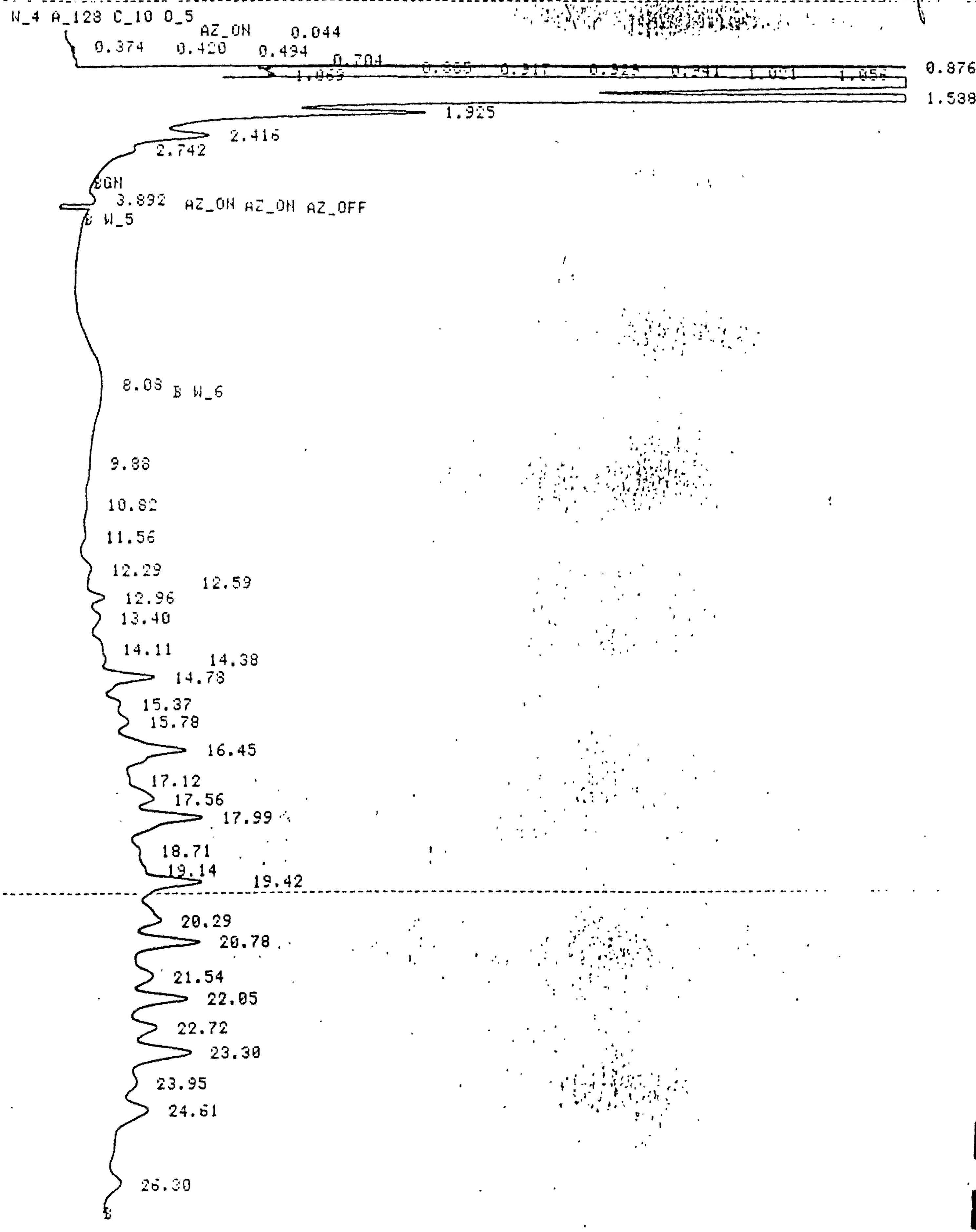
FILE 191   RUN 7   STARTED 00:08.2 80/01/11   HIGH BOILERS
% METHOD 1 DIESELS   LAST EDITED 20:06.0 80/01/10

RT	AREA	HEIGHT	BC	AREA PERCENT	HEIGHT PERCENT

FILE 189 RUN 5 STARTED 22:51.5 80/01/10 HIGH BOILERS 3> # 8030668
% METHOD 1 DIESELS LAST EDITED 20:06.0 80/01/10

8031568

+ spike



SEQUOIA Analytical Laboratory
2549 Middlefield Road
Redwood City, CA 94063 • (415) 364-9222

Wahler Associates
1023 Corporation Way
Palo Alto, CA 94303
Attn: Bob Breynaert

Date Sampled: 03/22/88
Date Received: 03/22/88
Date Reported: 03/25/88
Project: #JCO-104H

Q.C. DATA REPORT

Analyst: E. Hackl
Date of Analysis: 3/24/88
Method of Analysis: #214A Standard Method
Detection Limit: 0.01
Units: NTU

Sample Number	Analyte	Original Result	Duplicate Result	% Deviation
8031544	-	0.06	0.06	0

Sample Number	Analyte	Sample Contribution	Spike Added	Spike Result	% Recovery
8031544	-	0.048	0.042	0.090	100

SEQUOIA ANALYTICAL LABORATORY

Scot Cocanour

Arthur G. Burton
Laboratory Director

ANAMETRIX, INC.
LABORATORY SERVICES
ENVIRONMENTAL • ANALYTICAL CHEMISTRY
2754 AIELLO DRIVE • SAN JOSE, CA 95111 • (408) 629-1132

March 25, 1988
Work Order Number 8803125
Date Received 03/22/88
Project No. JCO-104H

Bob Breynaert
Wahler & Associates
1023 Corporation Way
Palo Alto, CA 94303

Four water samples were received for analysis of volatiles by GC/MS, using the following EPA method(s):

ANAMETRIX I.D.	SAMPLE I.D.	METHOD(S)
8803125-01	JCO-104H V-8	8240
-02	" V-4	"
-03	" MB-1	"
-04	" TB-1	"

RESULTS

See enclosed data sheets, Pages 2 thru 5.

EXTRA COMPOUNDS

None detected.

QUALITY ASSURANCE REPORTS

See enclosed data sheet, Page 6 thru 7.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

Burt Sutherland

Burt Sutherland
Laboratory Manager

BWS/da

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D.	: JCO-104H V-6	Anametrix I.D.	: 8803125-01
Matrix	: WATER	Analyst	: TC
Date sampled	: 03-22-88	Supervisor	: PG
Date analyzed	: 03-23-88	Date released	: 03-24-88
Dilution	: NONE	Instrument ID	: F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	7
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	% Recovery
17060-07-0	1,2-Dichloroethane-d4	75-133%	114%
2037-26-5	Toluene-d8	80-123%	106%
460-00-4	p-Bromofluorobenzene	63-125%	98%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H MB-1
Matrix : WATER
Date sampled : 03-22-88
Date analyzed: 03-24-88
Dilution : NONE

Anametrix I.D. : 8803125-03
Analyst : TC
Supervisor : PG
Date released : 03-24-88
Instrument ID : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	% Recovery
17060-07-0	1,2-Dichloroethane-d4	75-133%	114%
2037-26-5	Toluene-d8	80-123%	100%
460-00-4	p-Bromofluorobenzene	63-125%	89%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D.	: JCO-104H TB-1	Anametrix I.D.	: 8803125-04
Matrix	: WATER	Analyst	: TC
Date sampled	: 03-22-88	Supervisor	: PG
Date analyzed	: 03-23-88	Date released	: 03-24-88
Dilution	: NONE	Instrument ID	: F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	% Recovery
17060-07-0	1,2-Dichloroethane-d4	75-133%	103%
2037-26-5	Toluene-d8	80-123%	107%
460-00-4	p-Bromofluorobenzene	63-125%	97%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc. BRL : Below reporting limit.

ORGANIC ANALYSIS DATA SHEET - EPA METHOD 624/8240
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : METHOD BLANK
Matrix : WATER
Date sampled : NA
Date analyzed: 03-23-88
Dilution : NONE

Anametrix I.D. : 1CB0323V000
Analyst : TC
Supervisor : PG
Date released : 03-24-88
Instrument ID : F1

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
74-87-3	* Chloromethane	10	BRL
75-01-4	* Vinyl Chloride	10	BRL
74-83-9	* Bromomethane	10	BRL
75-00-3	* Chloroethane	10	BRL
75-69-4	* Trichlorofluoromethane	5	BRL
75-35-4	* 1,1-Dichloroethene	5	BRL
76-13-1	# Trichlorotrifluoroethane	5	BRL
67-64-1	**Acetone	20	BRL
75-15-0	**Carbondisulfide	5	BRL
75-09-2	* Methylene Chloride	5	BRL
156-60-5	* Trans-1,2-Dichloroethene	5	BRL
75-34-3	* 1,1-Dichloroethane	5	BRL
78-93-3	**2-Butanone	20	BRL
156-59-2	* Cis-1,2-Dichloroethene	5	BRL
67-66-3	* Chloroform	5	BRL
71-55-6	* 1,1,1-Trichloroethane	5	BRL
56-23-5	* Carbon Tetrachloride	5	BRL
71-43-2	* Benzene	5	BRL
107-06-2	* 1,2-Dichloroethane	5	BRL
79-01-6	* Trichloroethene	5	BRL
78-87-5	* 1,2-Dichloropropane	5	BRL
75-27-4	* Bromodichloromethane	5	BRL
110-75-8	* 2-Chloroethylvinylether	5	BRL
108-05-4	**Vinyl Acetate	10	BRL
10061-02-6	* Trans-1,3-Dichloropropene	5	BRL
108-10-1	**4-Methyl-2-Pentanone	10	BRL
108-88-3	* Toluene	5	BRL
10061-01-5	* cis-1,3-Dichloropropene	5	BRL
79-00-5	* 1,1,2-Trichloroethane	5	BRL
127-18-4	* Tetrachloroethene	5	BRL
591-78-6	**2-Hexanone	10	BRL
124-48-1	* Dibromochloromethane	5	BRL
108-90-7	* Chlorobenzene	5	BRL
100-41-4	* Ethylbenzene	5	BRL
1330-20-7	**Total Xylenes	5	BRL
100-42-5	**Styrene	5	BRL
75-25-2	* Bromoform	5	BRL
79-34-5	* 1,1,2,2-Tetrachloroethane	5	BRL
541-73-1	* 1,3-Dichlorobenzene	5	BRL
106-46-7	* 1,4-Dichlorobenzene	5	BRL
95-50-1	* 1,2-Dichlorobenzene	5	BRL

CAS #	Surrogate Compounds	Limits	% Recovery
17060-07-0	1,2-Dichloroethane-d4	75-133%	111%
2037-26-5	Toluene-d8	80-123%	104%
460-00-4	p-Bromofluorobenzene	63-125%	93%

* A Method 624 priority pollutant compound (Federal Register, 10/26/84)
** A compound on the U.S. EPA CLP Hazardous Substance List (HSL)
\# A compound added by Anametrix, Inc. BRL : Below reporting limit.

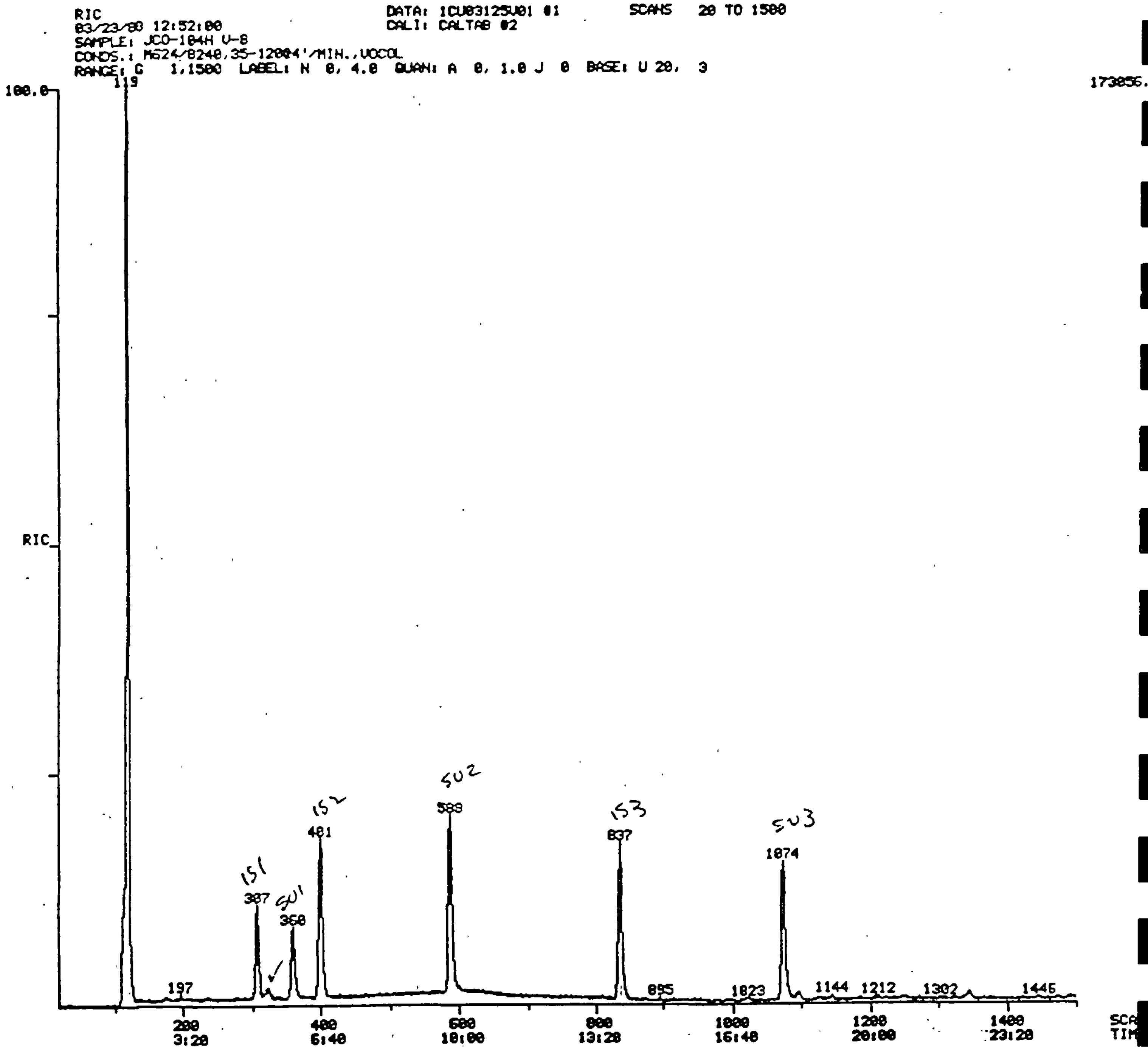
CLP VOLATILE MATRIX SPIKE REPORT -- EPA METHOD 624
ANAMETRIX, INC. (408) 629-1132

Sample I.D. : JCO-104H V-8
Matrix : WATER
Date sampled : 03-22-88
Date analyzed : 03-23-88

Anametrix I.D. : 8803125-01
Analyst : TC
Supervisor : PG
Date released : 03-24-88

COMPOUND	SPIKE AMT. (UG/L)	8803125 MS (UG/L)	%REC MSD	8803125 MSD (UG/L)	%REC MSD	RPD	%REC LIMITS*
1,1-DICHLOROETHENE	50	39	78%	39	78%	0%	61-131%
FREON 113	50	48	96%	48	96%	0%	52-150%
METHYLENE CHLORIDE	50	45	90%	45	90%	0%	55-130%
CHLOROFORM	50	48	96%	48	96%	0%	70-124%
1,1,1-TRICHLOROETHANE	50	43	86%	43	86%	0%	69-130%
BENZENE	50	45	90%	45	90%	0%	69-124%
1,2-DICHLOROETHANE	50	45	90%	45	90%	0%	65-119%
TRICHLOROETHENE	50	39	78%	39	78%	0%	61-106%
4-METHYL-2-PENTANONE	50	42	84%	40	80%	5%	42-147%
TOLUENE	50	47	94%	47	94%	0%	70-128%
CHLOROBENZENE	50	50	100%	48	96%	4%	73-123%
1,2-DICHLOROBENZENE	50	46	92%	46	92%	0%	50-110%

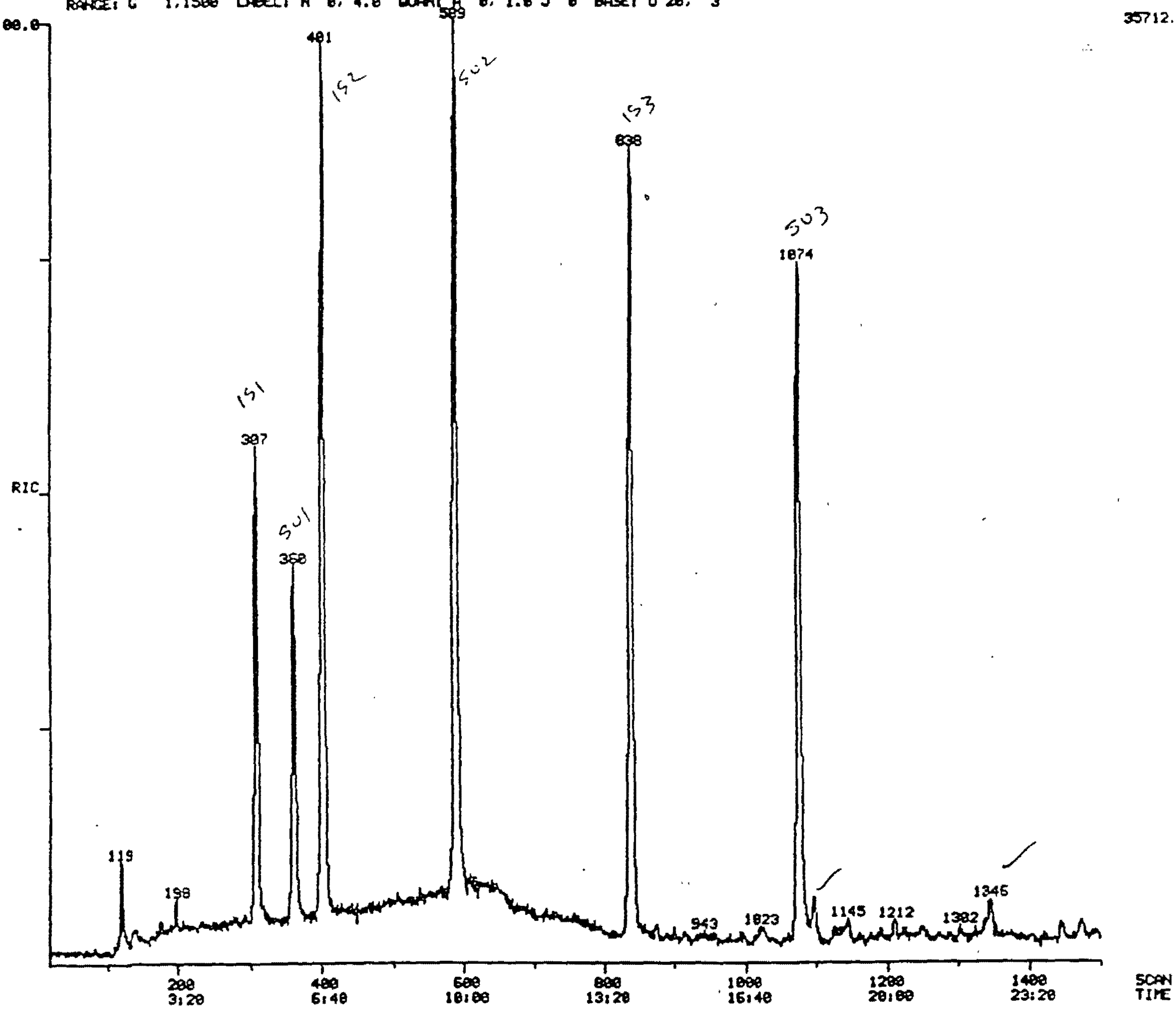
* Limits established by Anametrix, Inc.



RIC
03/23/88 12:52:00
SAMPLE: JCO-104H V-8
CONDS.: M624/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: 1CU03125V01 #1
CALI: CALTAB #2
SCANS 20 TO 1500
173856.
100.0
RIC
119
197
307
IS1
SU1
360
401
IS2
589
SU2
837
IS3
895
1023
1074
SU3
1144
1212
1302
1446
200
3:20
400
6:40
600
10:00
800
13:20
1000
16:40
1200
20:00
1400
23:20
SCA
TIM

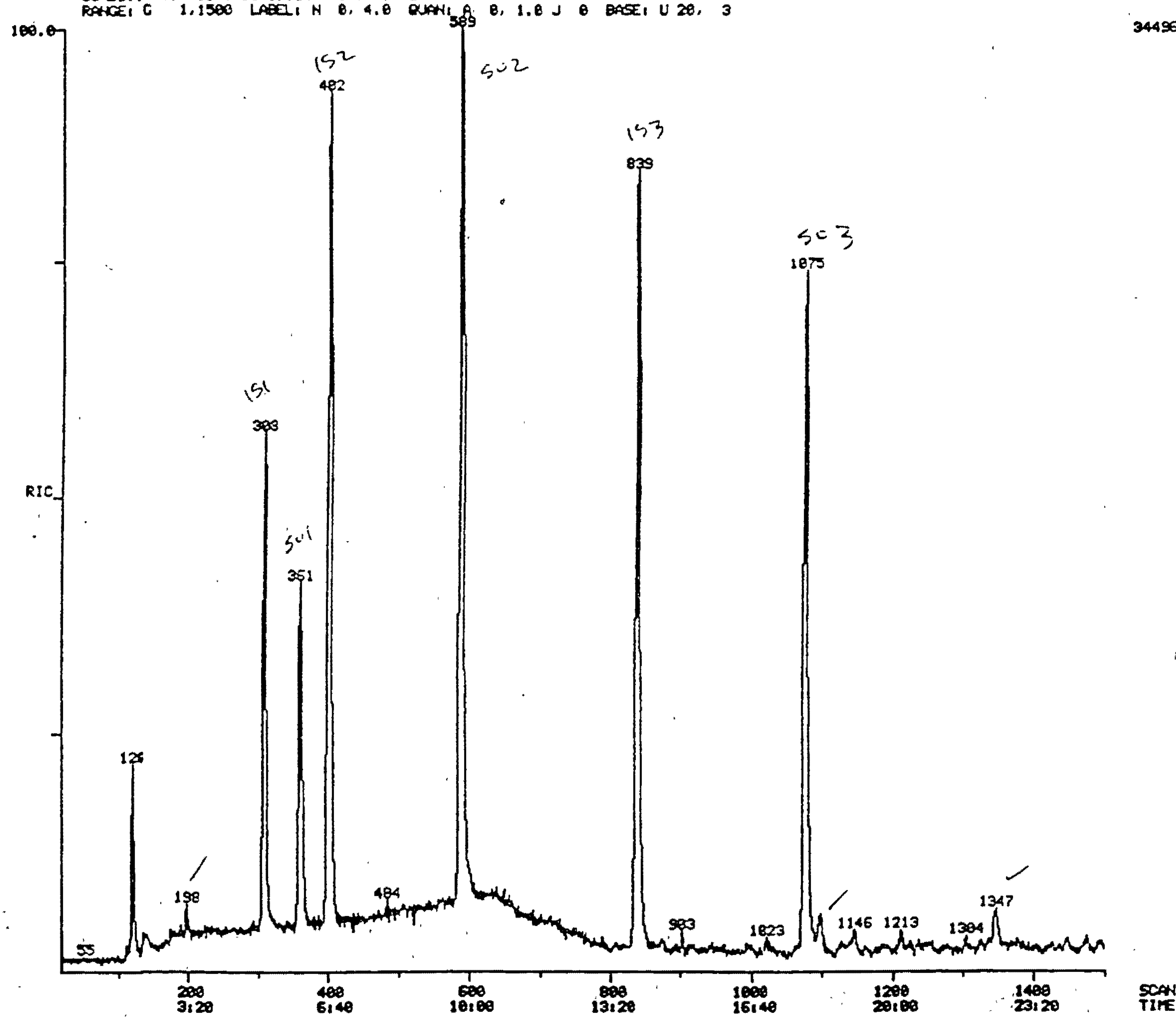
RIC
03/23/88 11:19:00
SAMPLE: JCO-104H MB-1
CONDS.: M624/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: 1CU03125V03 #1 SCANS 20 TO 1500
CALI: CALTAB #2



RIC
03/23/88 11:50:00
SAMPLE: JCO-104H TB-1
CONDS.: M624/8240,35-120@4'/MIN.,VOCOL
RANGE: G 1,1500 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: 1CU83125V04 #1 SCANS 20 TO 1500
CALI: CALTAB #2



SEQUOIA ANALYTICAL

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Jasco	Client Project ID:	#7401, Mountain View	Sampled: Aug 11, 1989
P.O. Drawer J	Matrix Descript:	Water	Received: Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed: Aug 25, 1989
Attention: Dan Thomas	First Sample #:	908-1771 B - C	Reported: Sep 5, 1989

ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 MODIFIED)

Sample Number	Sample Description	Methanol µg/L (ppb)	Ethanol µg/L (ppb)	Acetone µg/L (ppb)	Isopropanol µg/L (ppb)
908-1771	I-3-8-89	N.D.	N.D.	N.D.	N.D.
908-1772	V-3-8-89	310	2,700	N.D.	N.D.
908-1773	V-I-3-8-89	200	160	N.D.	N.D.
908-1774	V-4-8-89	730	N.D.	N.D.	N.D.
908-1777	V-9-8-89	N.D.	N.D.	N.D.	N.D.
908-1778	I-10-8-89	N.D.	N.D.	N.D.	N.D.
908-1779	I-2-8-89	N.D.	N.D.	N.D.	N.D.
908-1780	I-1-8-89	N.D.	N.D.	N.D.	N.D.
908-1781	V-8-8-89	N.D.	N.D.	N.D.	N.D.
etection Limits:		60.0	50.0	15.0	20.0

alytes reported as N.D. were not present above the stated limit of detection.

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boratory Director

Table 2. Summary of Groundwater Chemical Analysis Results (ppm)
Jasco Chemical Corporation

Chemical	V-1	V-3	V-4	V-5	V-6	V-7	V-8	V-9	V-10	I-1	I-2	I-3	Minimum Detection Limit
Methanol	0.2	0.31	0.73	na	na	na	nd	nd	nd	nd	nd	nd	0.06
Ethanol	0.16	2.7	nd	na	na	na	nd	nd	nd	nd	nd	nd	0.05
High Boiling Point Hydrocarbons	0.2	33	0.082	na	na	na	na	na	na	na	na	na	0.05
Chloroethane	nd	nd	0.013	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.01
1,1-Dichloroethane	0.0037	0.008	0.27	nd	nd	0.012	nd	0.0027	nd	0.002	0.0035	nd	0.002
1,1-Dichloroethene	nd	nd	0.033	nd	nd	0.0033	nd	nd	nd	nd	0.0023	nd	0.002
Total 1,2-Dichloroethene	nd	0.2	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.002
Methylene Chloride	0.014	0.29	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.002
1,1,1-Trichloroethane	nd	0.0026	0.069	nd	nd	0.0067	0.0026	nd	nd	nd	0.0027	nd	0.002
Vinyl chloride	nd	nd	0.0026	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.002
Other Analytes per EPA method 8240	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	na
Analytes per EPA method 8270	na	nd	na	na	na	na	na	na	na	na	na	na	na

nd - not detected
na - not analyzed

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Jasco	Client Project ID: #7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Matrix Descript: Water	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method: EPA 3510/8015	Extracted:	Aug 25, 1989
Attention: Dan Thomas	First Sample #: 908-1772 A	Analyzed:	Aug 31, 1989
		Reported:	Sep 5, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
908-1772	V-3-8-89	33,000
908-1773	V-1-8-89	200
908-1774	V-4-8-89	82

etection Limits:	**50.0**

gh Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
alytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-1-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1773	E - F	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	3.7
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	14
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-1-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Aug 17, 1989
Attention: Dan Thomas	Lab Number:	908-1773	B	Analyzed:	Sep 1, 1989
				Reported:	Sep 5, 1989

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10.0	N.D.
2,4-Dinitrophenol	50.0	N.D.
2-Methyl-4,6-dinitrophenol	50.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20.0	N.D.
Pentachlorophenol	20.0	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-3-8-89	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240	Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1772 D - E	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	8.0
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	200
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	280
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.6
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript: Water, V-3-8-89	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method: EPA 8270	Extracted:	Aug 25, 1989
Attention: Dan Thomas	Lab Number: 908-1772 F	Analyzed:	Aug 31, 1989
		Reported:	Sep 5, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50.0	N.D.
Benzoic Acid	10 0	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10.0	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2 0	N.D.
4,6-Dinitro-2-methylphenol	10.0	N.D.
2,4-Dinitrophenol	10.0	N.D.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-4-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1774	E - F	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	13
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	270
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	33
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	60
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	2.6
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-4-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Aug 17, 1989
Attention: Dan Thomas	Lab Number:	908-1774	B	Analyzed:	Sep 1, 1989
				Reported:	Sep 5, 1989

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10.0	N.D.
2,4-Dinitrophenol	50.0	N.D.
2-Methyl-4,6-dinitrophenol	50.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20.0	N.D.
Pentachlorophenol	20.0	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-5-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1783	A - B	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-6-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1775	A - B	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10 0	N.D.
Carbon disulfide	2.0	N.D.
[redacted]arbon tetrachloride	2.0	N.D.
[redacted]hlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
[redacted]-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
[redacted],1-Dichloroethane	2.0	N.D.
[redacted]2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
[redacted]otal 1,2-Dichloroethene	2.0	N.D.
[redacted]2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
[redacted]hylbenzene	2.0	N.D.
[redacted]Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
[redacted]Methyl-2-pentanone	10.0	N.D.
[redacted]yrene	2.0	N.D.
[redacted],2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
T[redacted]uene	2.0	N.D.
1[redacted],1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
T[redacted]chloroethene	2.0	N.D.
T[redacted]chlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
T[redacted]al Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

S[redacted]QUOIA ANALYTICAL

Ar[redacted]ur G. Burton
Laboratory Director

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Jasco	Client Project ID: #7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript: Water, V-6A-8-89	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number: 908-1776 A - B	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-7-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1782	A - B	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	12
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	3.3
otal 1,2-Dichloroethene	2.0	N.D.
,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
thylbenzene	2.0	N.D.
-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
-Methyl-2-pentanone	10.0	N.D.
tyrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
oluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	6.7
1,1,2-Trichloroethane	2.0	N.D.
ichloroethene	2.0	N.D.
ichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
tal Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: #7401, Mountain View Sample Descript: Water, V-8-8-89 Analysis Method: EPA 8240 Lab Number: 908-1781 C - D		Sampled: Aug 11, 1989 Received: Aug 11, 1989 Analyzed: Aug 25, 1989 Reported: Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.8
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-9-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1777	C - D	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.7
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, V-10-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1778	C - D	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, I-1-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1780	C - D	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.0
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript: Water, I-2-8-89	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number: 908-1779 C - D	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	3.5
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	2.3
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.7
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, I-3-8-89	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240	Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number:	908-1771 D - E	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7401, Mountain View		Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript:	Water, I-3-8-89		Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Aug 17, 1989
Attention: Dan Thomas	Lab Number:	908-1771	A	Analyzed:	Sep 1, 1989
				Reported:	Sep 5, 1989

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10.0	N.D.
2,4-Dinitrophenol	50.0	N.D.
2-Methyl-4,6-dinitrophenol	50.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20.0	N.D.
Pentachlorophenol	20.0	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7401, Mountain View	Sampled:	Aug 11, 1989
P.O. Drawer J	Sample Descript: Water, Travel Blank	Received:	Aug 11, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 25, 1989
Attention: Dan Thomas	Lab Number: 908-1784 A - B	Reported:	Sep 5, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V1	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 15, 1989
Attention: Dan Thomas	Lab Number: 912-0236 A-B	Reported:	Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.2
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	Jasco #7403		Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V-3		Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Dec 7, 1989
Attention: Dan Thomas	Lab Number:	912-0238	A - B	Reported:	Dec 11, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	36
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	6.4
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	11
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.2
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

9120237.JAS <6>

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Jasco	Client Project ID: Jasco #7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V-4	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 7, 1989
Attention: Dan Thomas	Lab Number: 912-0239 A - B	Reported:	Dec 11, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	500.0	1,700
Benzene	100.0	N.D.
Bromodichloromethane	100.0	N.D.
Bromoform	100.0	N.D.
Bromomethane	100.0	N.D.
2-Butanone	500.0	N.D.
Carbon disulfide	100.0	N.D.
Carbon tetrachloride	100.0	N.D.
Chlorobenzene	100.0	N.D.
Chlorodibromomethane	100.0	N.D.
Chloroethane	100.0	390
2-Chloroethyl vinyl ether	500.0	N.D.
Chloroform	100.0	N.D.
Chloromethane	100.0	N.D.
1,1-Dichloroethane	100.0	7,800
1,2-Dichloroethane	100.0	N.D.
1,1-Dichloroethene	100.0	190
Total 1,2-Dichloroethene	100.0	N.D.
1,2-Dichloropropane	100.0	N.D.
cis 1,3-Dichloropropene	100.0	N.D.
trans 1,3-Dichloropropene	100.0	N.D.
Ethylbenzene	100.0	N.D.
2-Hexanone	500.0	N.D.
Methylene chloride	100.0	3,500
4-Methyl-2-pentanone	500.0	N.D.
Styrene	100.0	N.D.
1,1,2,2-Tetrachloroethane	100.0	N.D.
Tetrachloroethene	100.0	N.D.
Toluene	100.0	N.D.
1,1,1-Trichloroethane	100.0	1,700
1,1,2-Trichloroethane	100.0	N.D.
Trichloroethene	100.0	N.D.
Trichlorofluoromethane	100.0	N.D.
Vinyl acetate	100.0	N.D.
Vinyl chloride	100.0	N.D.
Total Xylenes	100.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Project Manager

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: Jasco, 7403 Sample Descript: Water, V7 Analysis Method: EPA 8240 Lab Number: 912-0233 A-B		Sampled: Dec 1, 1989 Received: Dec 1, 1989 Analyzed: Dec 15, 1989 Reported: Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	12
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	5.0
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropene	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	4.6
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V8	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 15, 1989
Attention: Dan Thomas	Lab Number: 912-0232 A-B	Reported:	Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.6
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: Jasco, 7403 Sample Descript: Water, V9 Analysis Method: EPA 8240 Lab Number: 912-0231 A-B		Sampled: Dec 1, 1989 Received: Dec 1, 1989 Analyzed: Dec 15, 1989 Reported: Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.0
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	2.3
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

BAB

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID: Jasco #7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V-10	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 7, 1989
Attention: Dan Thomas	Lab Number: 912-0237 A - B	Reported:	Dec 11, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, I1	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 15, 1989
Attention: Dan Thomas	Lab Number: 912-0235 A-B	Reported:	Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
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9120231.JAS <6>

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Jasco	Client Project ID:	Jasco, 7403		Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, I2		Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Dec 15, 1989
Attention: Dan Thomas	Lab Number:	912-0234	A-B	Reported:	Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	3.8
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	2.6
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	3.6
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: Jasco, 7403 Matrix Descript: Water Analysis Method: EPA 3510/8015 First Sample #: 912-0236 F	Sampled: Received: Extracted: Analyzed: Reported:	Dec 1, 1989 Dec 1, 1989 Dec 6, 1989 Dec 19, 1989 Dec 21, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons μg/L (ppb)
912-0236	V1	300
912-0237	V4	2,100

Detection Limits:	100.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
Project Manager

Please Note:
Well V4 exhibits contamination similar to that of V3. If "Arcosolv" Glycol Ether mixture peaks included, total would exceed 10,000 μg/L.

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Jasco	Client Project ID: Jasco #7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Matrix Descript: Water, V-3	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 3510/8015	Extracted:	Dec 7, 1989
Attention: Dan Thomas	First Sample #: 912-0238 E	Analyzed:	Dec 8, 1989
		Reported:	Dec 11, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
9120238 E	V-3	920

Detection Limits:	**50.0**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

Please Note:
Reported value does not include peaks representing "Arcosolv" glycol ether mixture. If those peaks included then HBP hydrocarbons would equal 1,500 µg/L.

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Jasco	Client Project ID:	Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V1	Received:	Dec 1, 1989
Mountain View, CA 94042			Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number:	912-0236 C-D	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	Jasco #7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V-3	Received:	Dec 1, 1989
Mountain View, CA 94042			Analyzed:	Dec 8, 1989
Attention: Dan Thomas	Lab Number:	912-0238 C - D	Reported:	Dec 11, 1989

ACETONE & ALCOHOLS BY GAS CHROMOTAGRAPHY (EPA 8015 MODIFIED)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	[illegible]
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V3A	Received:	Dec 1, 1989
Mountain View, CA 94042		Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number: 912-0241 A-B	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V3B, Filtered in lab	Received:	Dec 1, 1989
Mountain View, CA 94042			Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number:	912-0242 A-B	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco
P.O. Drawer J
Mountain View, CA 94042
Attention: Dan Thomas

Client Project ID: Jasco #7403
Sample Descript: Water, V-4
Lab Number: 912-0239 C - D

Sampled: Dec 1, 1989
Received: Dec 1, 1989
Analyzed: Dec 8, 1989
Reported: Dec 11, 1989

ACETONE & ALCOHOLS BY GAS CHROMOTAGRAPHY (EPA 8015 MODIFIED)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15.0	1,200
Ethanol	50.0	15,000
Isopropanol	20.0	1,400
Methanol	60.0	170

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V6	Received:	Dec 1, 1989
Mountain View, CA 94042		Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number: 912-0232 C-D	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V9	Received:	Dec 1, 1989
Mountain View, CA 94042		Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number: 912-0231 C-D	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	Jasco #7403		Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V-10		Received:	Dec 1, 1989
Mountain View, CA 94042				Analyzed:	Dec 8, 1989
Attention: Dan Thomas	Lab Number:	912-0237	C - D	Reported:	Dec 11, 1989

ACETONE & ALCOHOLS BY GAS CHROMOTAGRAPHY (EPA 8015 MODIFIED)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, I1	Received:	Dec 1, 1989
Mountain View, CA 94042			Analyzed:	Dec 12, 1989
Attention: Dan Thomas	Lab Number:	912-0235 C-D	Reported:	Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: Jasco, 7403 Sample Descript: Water, I2 Lab Number: 912-0234 C-D		Sampled: Dec 1, 1989 Received: Dec 1, 1989 Analyzed: Dec 12, 1989 Reported: Dec 21, 1989

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15.0	N.D.
Ethanol	50.0	N.D.
Isopropanol	20.0	N.D.
Methanol	60.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V1	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8040	Extracted:	Dec 11, 1989
Attention: Dan Thomas	Lab Number: 912-0236 E	Analyzed:	Dec 13, 1989
		Reported:	Dec 21, 1989

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	4.0	N.D.
2-Chlorophenol	4.0	N.D.
2,4-Dichlorophenol	4.0	N.D.
2,4-Dimethylphenol	20.0	N.D.
2,4-Dinitrophenol	100.0	N.D.
2-Methyl-4,6-dinitrophenol	100.0	N.D.
2-Nitrophenol	4.0	N.D.
4-Nitrophenol	40.0	N.D.
Pentachlorophenol	40.0	N.D.
Phenol	4.0	N.D.
2,4,6-Trichlorophenol	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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BAB

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, V4	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8040	Extracted:	Dec 11, 1989
Attention: Dan Thomas	Lab Number: 912-0239 E	Analyzed:	Dec 13, 1989
		Reported:	Dec 21, 1989

PHENOLS (EPA 8040)

Analyte	Detection Limit μg/L	Sample Results μg/L
4-Chloro-3-methylphenol	4.0	N.D.
2-Chlorophenol	4.0	N.D.
2,4-Dichlorophenol	4.0	N.D.
2,4-Dimethylphenol	20.0	N.D.
2,4-Dinitrophenol	100.0	N.D.
2-Methyl-4,6-dinitrophenol	100.0	N.D.
2-Nitrophenol	4.0	N.D.
4-Nitrophenol	40.0	N.D.
Pentachlorophenol	40.0	N.D.
Phenol	4.0	N.D.
2,4,6-Trichlorophenol	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Project Manager

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Jasco	Client Project ID:	Jasco #7403		Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript:	Water, V-3		Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method:	EPA 8270		Extracted:	Dec 8, 1989
Attention: Dan Thomas	Lab Number:	912-0238		Analyzed:	Dec 8, 1989
				Reported:	Dec 11, 1989

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit μg/L	Sample Results μg/L
2,4-Dinitrotoluene	4.0	N.D.
2,6-Dinitrotoluene	4.0	N.D.
Di-N-octyl phthalate	4.0	N.D.
Fluoranthene	4.0	N.D.
Fluorene	4.0	N.D.
Hexachlorobenzene	4.0	N.D.
Hexachlorobutadiene	4.0	N.D.
Hexachlorocyclopentadiene	4.0	N.D.
Hexachloroethane	4.0	N.D.
Indeno(1,2,3-cd)pyrene	4.0	N.D.
Isophorone	4.0	N.D.
2-Methylnaphthalene	4.0	N.D.
2-Methylphenol	4.0	N.D.
4-Methylphenol	4.0	N.D.
Naphthalene	4.0	N.D.
2-Nitroaniline	20.0	N.D.
3-Nitroaniline	20.0	N.D.
4-Nitroaniline	20.0	N.D.
Nitrobenzene	4.0	N.D.
2-Nitrophenol	4.0	N.D.
4-Nitrophenol	20.0	N.D.
N-Nitrosodiphenylamine	4.0	N.D.
N-Nitroso-di-N-propylamine	4.0	N.D.
Pentachlorophenol	20.0	N.D.
Phenathrene	4.0	N.D.
Phenol	4.0	N.D.
Pyrene	4.0	N.D.
1,2,4-Trichlorobenzene	4.0	N.D.
2,4,5-Trichlorophenol	20.0	N.D.
2,4,6-Trichlorophenol	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: Jasco, 7403	Sampled:	Dec 1, 1989
P.O. Drawer J	Sample Descript: Water, Travel Blank	Received:	Dec 1, 1989
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Dec 15, 1989
Attention: Dan Thomas	Lab Number: 912-0240 A-B	Reported:	Dec 21, 1989

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10.0	[illegible]
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10.0	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10.0	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10.0	N.D.
Methylene chloride	2.0	15
4-Methyl-2-pentanone	10.0	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Matrix Descript: Water	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 3510/8015	Extracted:	Feb 5, 1990
Attention: Dan Thomas	First Sample #: 001-4102 E	Analyzed:	Feb 20, 1990
		Reported:	Feb 28, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons μg/L (ppb)
001-4102	V3	250
001-4103	V1	1,100
001-4104	V4	120

Detection Limits:	50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
Project Manager

Please Note:
'Arcosolv' Glycol Ether mix subtracted from V3 & V4 results. If 'Arcosolv' included then HBP results would be: V3 = 480 μg/L, V4 = 200 μg.

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Jasco	Client Project ID:	#7403		Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript:	Water, V1		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number:	001-4103	A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	36
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	5.2
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, V1		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number:	001-4103	C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, V1		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Feb 7, 1990
Attention: Dan Thomas	Lab Number:	001-4103	F	Analyzed:	Feb 22, 1990
				Reported:	Feb 26, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript: Water, V3	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4102 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	47
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	14
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, V3		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number:	001-4102	C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	20
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	3,800

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript:	Water, V3		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8270		Extracted:	Feb 13, 1990
Attention: Dan Thomas	Lab Number:	001-4102	F	Analyzed:	Feb 18, 1990
				Reported:	Feb 26, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50	N.D.
Benzoic Acid	10	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10	N.D.
2,4-Dinitrophenol	10	N.D.

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Jasco	Client Project ID:	#7403		Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript:	Water, V3		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8270		Extracted:	Feb 13, 1990
Attention: Dan Thomas	Lab Number:	001-4102		Analyzed:	Feb 18, 1990
				Reported:	Feb 26, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10	N.D.
3-Nitroaniline	10	N.D.
4-Nitroaniline	10	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript: Water, V4	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4105 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	20	N.D.
Benzene	4.0	N.D.
Bromodichloromethane	4.0	N.D.
Bromoform	4.0	N.D.
Bromomethane	4.0	N.D.
2-Butanone	20	N.D.
Carbon disulfide	4.0	N.D.
Carbon tetrachloride	4.0	N.D.
Chlorobenzene	4.0	N.D.
Chlorodibromomethane	4.0	N.D.
Chloroethane	4.0	6.8
2-Chloroethyl vinyl ether	20	N.D.
Chloroform	4.0	N.D.
Chloromethane	4.0	N.D.
1,1-Dichloroethane	4.0	260
1,2-Dichloroethane	4.0	N.D.
1,1-Dichloroethene	4.0	29
Total 1,2-Dichloroethene	4.0	N.D.
1,2-Dichloropropane	4.0	N.D.
cis 1,3-Dichloropropene	4.0	N.D.
trans 1,3-Dichloropropene	4.0	N.D.
Ethylbenzene	4.0	N.D.
2-Hexanone	20	N.D.
Methylene chloride	4.0	15
4-Methyl-2-pentanone	20	N.D.
Styrene	4.0	N.D.
1,1,2,2-Tetrachloroethane	4.0	N.D.
Tetrachloroethene	4.0	N.D.
Toluene	4.0	N.D.
1,1,1-Trichloroethane	4.0	140
1,1,2-Trichloroethane	4.0	N.D.
Trichloroethene	4.0	N.D.
Trichlorofluoromethane	4.0	N.D.
Vinyl acetate	4.0	N.D.
Vinyl chloride	4.0	5.4
Total Xylenes	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, V4	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4105 C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	100
Ethanol	50	200
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, V4	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8040	Extracted:	Feb 7, 1990
Attention: Dan Thomas	Lab Number: 001-4105 F	Analyzed:	Feb 22, 1990
		Reported:	Feb 26, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit μg/L	Sample Results μg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript:	Water, V5		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number:	001-4100	A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript:	Water, V6		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number:	001-4099	A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

nalytes reported as N.D. were not present above the stated limit of detection.

EQUOIA ANALYTICAL

om A. Bjorkman
roject Manager

SEQUOIA ANALYTICAL

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: #7403 Sample Descript: Water, V7 Analysis Method: EPA 8240 Lab Number: 001-4098 A-B	Sampled: Received: Analyzed: Reported:	Jan 30, 1990 Jan 31, 1990 Feb 8, 1990 Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	15
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	2.4
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	3.3
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

14102.JAS <20>

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Jasco	Client Project ID: #7403	Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript: Water, V8	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4095 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.8
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Tom A. Bjorkman
Project Manager

14102.JAS <17>

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, V8	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4095 C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
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Jasco	Client Project ID: #7403	Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript: Water, V9	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4094 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.8
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

John A. Bjorkman
Project Manager

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, V9	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4094 C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript: Water, V10	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4104 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	3.0
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

om A. Bjorkman
Project Manager

14102.JAS <28>

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Jasco	Client Project ID: #7403	Sampled: 1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, V10	Received: Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed: Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4104 C-D	Reported: Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript: Water, I1	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4101 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, I1		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number:	001-4101	C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Bjorn A. Bjorkman
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Jasco	Client Project ID: #7403	Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript: Water, I2	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4096 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.9
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	3.2
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Jon A. Bjorkman
Project Manager

14102.JAS <18>

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, I2	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4096 C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jan 30, 1990
P.O. Drawer J	Sample Descript: Water, I3	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4097 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

14102.JAS <19>

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Jasco	Client Project ID: #7403	Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript: Water, I3	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number: 001-4097 C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, I3		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Feb 7, 1990
Attention: Dan Thomas	Lab Number:	001-4097	F	Analyzed:	Feb 20, 1990
				Reported:	Feb 28, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: #7403 Sample Descript: Water, EB Analysis Method: EPA 8240 Lab Number: 001-4106 A-B		Sampled: Jan 31, 1990 Received: Jan 31, 1990 Analyzed: Feb 8, 1990 Reported: Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, EB		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number:	001-4106	C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	50	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

John A. Bjorkman
Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Jan 31, 1990
P.O. Drawer J	Sample Descript: Water, FB	Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Feb 8, 1990
Attention: Dan Thomas	Lab Number: 001-4107 A-B	Reported:	Feb 26, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	2.8
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

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Jasco	Client Project ID:	#7403		Sampled:	1/30-1/31/90
P.O. Drawer J	Sample Descript:	Water, FB		Received:	Jan 31, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Feb 14, 1990
Attention: Dan Thomas	Lab Number:	001-4107	C-D	Reported:	Feb 26, 1990

ACETONE & ALCOHOL BY GC (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

O.H. MATERIALS CORPORATION
FEBRUARY 28, 1990

PROJECT: JASCO CHEMICAL CORP. MOUNTAIN VIEW, CA. PROJECT NUMBER: 7403

SAMPLE NUMBER: MA9625

TOTAL EXTRACTABLE HYDROCARBONS

Date Extracted: 02-13-90
Date Analzyed: 02-20-90
QC Batch Number: 90-0293

HSL SEMI VOLATILES

Date Analzyed: 02-09-90
QC Batch Number: 90-0219

PRIORITY POLLUTANT VOLATILES

Date Analzyed: 02-12-90
QC Batch Number: 90-0321

METHANOL, ETHANOL, ACETONE, ISOPROPYL ALCOHOL, METHYL ETHYL KETONE

Date Analyzed: 02-22-90
QC Batch Number: QW0210

MULTI - TECH, A Division of
Environmental Testing and Certification Corp.
320 Tesconi Circle, Suite G
Santa Rosa, California 95401
707-544-5570

ETC - MULTI-TECH

FEBRUARY 28, 1990

CLIENT:	O.H. MATERIALS CORPORATION SUITE #9 1425 W. NORTH MARKET BLVD. SACRAMENTO, CA 95834
ATTN:	SCOTT RICE
ANALYSIS:	PETROLEUM HYDROCARBONS (IR), HSL SEMI VOLATILES, PRIORITY POLLUTANT VOLATILES, EPA METHOD 8015-DIRECT INJECTION: NONHALOGENATED VOLATILE ORGANICS
QC BATCH NUMBER:	90-0293, 90-0219, 90-0321, QW0210
PROJECT:	JASCO CHEMICAL CORP. MOUNTAIN VIEW CA. PROJECT NUMBER: 7403
SAMPLE TYPE:	LIQUID
COLLECTED BY:	CLIENT

SAMPLE NO.	SAMPLE POINT	SAMPLE DATE	DATE IN LAB
MA9625	V-4 GROUNDWATER FROM MONITER WELL	01-31-90	02-02-90

This report is "PROPRIETARY AND CONFIDENTIAL" and delivered to, and intended for the exclusive use of the above named client only. Environmental Testing and Certification Corp. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the above named client.

The analyses and data interpretation that form the basis of this report were prepared under the direct supervision and control of the undersigned who is solely responsible for the contents and conclusions therein.

Reviewed and Approved by: Thomas F. Cullen Jr.

Thomas F. Cullen Jr., Laboratory Director
ETC/Multi-Tech Laboratories, Inc.

2/28/90
Date

FEB 28, 1990

TABLE 1: QUANTATIVE RESULTS

CALIFORNIA "LUFT" ORGANICS (ZR62)

Chain of Custody Data Required for ETC Data Management Summary Reports					
MA9625	O. H. MATERIALS	7403	V-4	900131	0
ETC Sample No.	*Company*	*Facility*	*Sample Point*	*Date*	*Time Hours*

Compound	Results				
	Sample Concen. ug/l	*MDL ug/l*	*Blank Data ug/l*	*Batch #*	
Petroleum Hydrocarbons(heavy)	300	300	ND	Q900293	

FEB 21, 1990

TABLE 1: QUANTITATIVE RESULTS

PRIORITY POLLUTANT VOLATILES

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time Hours
MA9625	O. H. MATERIALS	7403	V-4	900131	0

Compound	Results: Sample Concen. ug/l	MDL ug/l	Blank Data ug/l	Batch #
Chloromethane	ND	10.0	ND	Q900321
Bromomethane	ND	10.0	ND	Q900321
Vinyl chloride	ND	10.0	ND	Q900321
Chloroethane	ND	10.0	ND	Q900321
Methylene chloride	12.8	5.00	ND	Q900321
Acrolein	ND	1000	ND	Q900321
Acetone	ND	100	ND	Q900321
Carbon disulfide	ND	5.00	ND	Q900321
Acrylonitrile	ND	500	ND	Q900321
Trichlorofluoromethane	ND	10.0	ND	Q900321
1,1-Dichloroethene	26.2	5.00	ND	Q900321
1,1-Dichloroethane	328	5.00	ND	Q900321
trans-1,2-Dichloroethene	ND	5.00	ND	Q900321
Chloroform	ND	5.00	ND	Q900321
1,2-Dichloroethane	ND	5.00	ND	Q900321
2-Butanone	ND	10.0	ND	Q900321
1,1,1-Trichloroethane	129	5.00	ND	Q900321
Carbon tetrachloride	ND	5.00	ND	Q900321
Vinyl acetate	ND	10.0	ND	Q900321
Bromodichloromethane	ND	5.00	ND	Q900321
1,2-Dichloropropane	ND	5.00	ND	Q900321
cis-1,3-Dichloropropene	ND	5.00	ND	Q900321
Trichloroethene	ND	5.00	ND	Q900321
Dibromochloromethane	ND	5.00	ND	Q900321
1,1,2-Trichloroethane	ND	5.00	ND	Q900321
Benzene	ND	5.00	ND	Q900321
trans-1,3-Dichloropropene	ND	5.00	ND	Q900321
2-Chloroethylvinyl ether	ND	10.0	ND	Q900321
Bromoform	ND	5.00	ND	Q900321
2-Hexanone	ND	10.0	ND	Q900321
4-Methyl-2-pentanone	ND	10.0	ND	Q900321
Tetrachloroethene	ND	5.00	ND	Q900321
1,1,2,2-Tetrachloroethane	ND	5.00	ND	Q900321
Toluene	ND	5.00	ND	Q900321
Chlorobenzene	ND	5.00	ND	Q900321
Ethylbenzene	ND	5.00	ND	Q900321
Styrene	ND	5.00	ND	Q900321
m-Xylene	ND	5.00	ND	Q900321
o+p-Xylenes	ND	5.00	ND	Q900321

FEB 27, 1990

TABLE 1: QUANTITATIVE RESULTS

EPA METHOD 8015-DIRECT INJECTION: NONHALOGENATED VOLATILE ORGANICS (ZR56)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time Hours
MA9625	O. H. MATERIALS	7403	V-4	900131	0

Compound	Results				
	Sample Concen. mg/kg	MDL mg/kg	Blank Data mg/kg	Batch #	
Ethanol	ND	1.00	ND	QW0210	
Isopropanol	ND	1.00	ND	QW0210	
Methanol	ND	10.0	ND	QW0210	
Methyl ethyl ketone	ND	10.0	ND	QW0210	
Acetone	ND	10.0	ND	QW0210	

FEB 22, 1990

TABLE 1: QUANTITATIVE RESULTS

HSL SEMI-VOLATILES - (ZR06)

Chain of Custody Data Required for ETC Data Management Summary Reports					
MA9625	O. H. MATERIALS	7403	V-4	900131	0
ETC Sample No.	*Company*	*Facility*	*Sample Point*	*Date*	*Time Hours*

Compound	*Results*				
	Sample Concen. ug/l	*MDL ug/l*	*Blank Data ug/l*	*Batch #*	
Phenol	ND	10.0	ND	Q900219	
2-Chlorophenol	ND	10.0	ND	Q900219	
2-Methylphenol	ND	10.0	ND	Q900219	
4-Methylphenol	ND	10.0	ND	Q900219	
2-Nitrophenol	ND	10.0	ND	Q900219	
2,4-Dimethylphenol	ND	10.0	ND	Q900219	
2,4-Dichlorophenol	ND	10.0	ND	Q900219	
p-Chloro-m-cresol	ND	10.0	ND	Q900219	
2,4,6-Trichlorophenol	ND	10.0	ND	Q900219	
2,4,5-Trichlorophenol	ND	10.0	ND	Q900219	
2,4-Dinitrophenol	ND	50.0	ND	Q900219	
4-Nitrophenol	ND	50.0	ND	Q900219	
4,6-Dinitro-o-cresol	ND	50.0	ND	Q900219	
Pentachlorophenol	ND	50.0	ND	Q900219	

FEB 17, 1990

TABLE 1: QUALITY ASSURANCE DATA

HSL SEMI-VOLATILES - (ZR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

See Below

ETC Batch No.

Compound	*QC Blank and Spiked Data*			*QC Matrix Spike*			*QC Duplicate*			
	Blank Data ug/l	*Concen. Added ug/l*	*% Recov*	*Unspiked Sample ug/l*	*Concen. Added ug/l*	*% Recov*	*First ug/l*	*Second ug/l*	*RPD*	*Batch #*
Phenol	ND	100	87	27.1	100	77	104	118	13	Q900219
2-Chlorophenol	ND	100	86	ND	100	71	70.6	75.4	7	Q900219
1,4-Dichlorobenzene	ND	50.0	89	ND	50.0	87	43.7	42.7	2	Q900219
N-Nitroso-di-n-propylamine	ND	50.0	89	ND	50.0	96	47.8	48.8	2	Q900219
1,2,4-Trichlorobenzene	ND	50.0	83	ND	50.0	79	39.5	38.2	3	Q900219
p-Chloro-m-cresol	ND	100	88	ND	100	92	92.2	93.0	.9	Q900219
Acenaphthene	ND	50.0	90	ND	50.0	79	39.7	39.7	.08	Q900219
4-Nitrophenol	ND	100	68	ND	100	82	82.2	87.8	7	Q900219
2,4-Dinitrotoluene	ND	50.0	90	ND	50.0	94	46.9	49.0	4	Q900219
Pentachlorophenol	ND	100	62	ND	100	97	97.1	112	15	Q900219
Di-n-butyl phthalate	ND	50.0	0	ND	50.0	0	ND	ND	0	Q900219
Pyrene	ND	50.0	111	ND	50.0	42	21.0	21.5	2	Q900219

Di-n-butyl phthalate shows no recovery because it was not included in the matrix spiking solution for this batch by sample prep.

FEB 21, 1990

TABLE 1: QUALITY ASSURANCE DATA

PRIORITY POLLUTANT VOLATILES (ZR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

See Below

ETC Batch No.

	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
Compound	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov	First ug/l	Second ug/l	RPD	Batch #
1,1-Dichloroethene	ND	20.0	102	ND	50.0	93	46.4	46.2	.5	Q900321
Trichloroethene	ND	20.0	98	ND	50.0	94	47.0	51.3	9	Q900321
Benzene	ND	20.0	98	ND	50.0	97	48.5	45.0	7	Q900321
Toluene	ND	20.0	97	ND	50.0	96	50.9	47.2	8	Q900321
Chlorobenzene	ND	20.0	99	ND	50.0	97	48.6	48.6	.008	Q900321

FEB 28, 1990

TABLE 1: QUALITY ASSURANCE DATA

EPA METHOD 8015-DIRECT INJECTION: NONHALOGENATED VOLATILE ORGANICS (ZR56)

Chain of Custody Data Required for ETC Data Management Summary Reports

See Below

ETC Batch No.

Compound	QC Blank and Spiked Data			QC Matrix Spike			QC Duplicate			
	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov	First mg/kg	Second mg/kg	RPD	Batch #
Ethanol	ND	18.8	101	-	-	-	-	-	-	QW0210
Isopropanol	ND	18.8	13	-	-	-	-	-	-	QW0210
Methanol	ND	19.0	96	-	-	-	-	-	-	QW0210
Methyl ethyl ketone	ND	19.3	101	-	-	-	-	-	-	QW0210

TABLE 2: METHOD PERFORMANCE DATA

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports						
MA9625	O. H. MATERIALS	7403	V-4	900131		0
ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours

Compound	Amount added ug	% Recovery	Control Limits	
			Lower	Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	.250	110	76	114
Bromofluorobenzene	.250	98	86	115
Toluene-D8	.250	99	88	110
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	0	0	35	114
2-Fluorobiphenyl	0	0	43	116
Terphenyl-D14	0	0	33	141
ACID FRACTION (GC/MS)				
Phenol-D6	100	65	10	94
2-Fluorophenol	100	81	21	100
2,4,6-Tribromophenol	100	87	10	123
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

TABLE 2: METHOD PERFORMANCE DATA

FEB 21, 1990

Surrogate Recovery

Chain of Custody Data Required for ETC Data Management Summary Reports						
MA9625	O. H. MATERIALS	7403	V-4	900131		0
ETC Sample No.	Company	Facility	Sample Point	Date	Time	Hours

Compound	Amount added ug	% Recovery	Control Limits	
			Lower	Upper
VOLATILE FRACTION (GC/MS)				
1,2-Dichloroethane-D4	.250	110	76	114
Bromofluorobenzene	.250	98	86	115
Toluene-D8	.250	99	88	110
BASE/NEUTRAL FRACTION (GC/MS)				
Nitrobenzene-D5	-	-	-	-
2-Fluorobiphenyl	-	-	-	-
Terphenyl-D14	-	-	-	-
ACID FRACTION (GC/MS)				
Phenol-D6	-	-	-	-
2-Fluorophenol	-	-	-	-
2,4,6-Tribromophenol	-	-	-	-
PESTICIDE/PCB FRACTION (GC)				
Dibutylchlorendate	-	-	-	-
Bromochloromethane	-	-	-	-
a,a,a-Trifluorotoluene	-	-	-	-

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Jasco	Client Project ID: #7403	Sampled:	4/25-26/90
P.O. Drawer J	Matrix Descript: Water	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 3510/8015		
Attention: Dan Thomas	First Sample #: 004-3815	Analyzed:	May 7, 1990
		Reported:	May 11, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
004-3815	MW V-1	970
004-3816	MW V-3	270
004-3817	MW V-4	240

Detection Limits:	50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Maria Lee

Maria Lee
Project Manager

Please Note:
The above samples do not appear to contain diesel.

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Jasco	Client Project ID:	#7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-1	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number:	004-3815	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	8.2
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	6.8
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-1		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3815		Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-1	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8040		
Attention: Dan Thomas	Lab Number: 004-3815	Analyzed:	May 9, 1990
		Reported:	May 11, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	37
Pentachlorophenol	20	23
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-3	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3816	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	3.3
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	53
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-3		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3816		Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-3	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8270		
Attention: Dan Thomas	Lab Number: 004-3816	Analyzed:	May 9, 1990
		Reported:	May 11, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50	N.D.
Benzoic Acid	10	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10	N.D.
2,4-Dinitrophenol	10	N.D.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-3	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8270		
Attention: Dan Thomas	Lab Number: 004-3816	Analyzed:	May 9, 1990
		Reported:	May 11, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10	N.D.
3-Nitroaniline	10	N.D.
4-Nitroaniline	10	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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43815.JAS <28>

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-4	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3817	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	20	N.D.
Benzene	4.0	N.D.
Bromodichloromethane	4.0	N.D.
Bromoform	4.0	N.D.
Bromomethane	4.0	N.D.
2-Butanone	20	N.D.
Carbon disulfide	4.0	N.D.
Carbon tetrachloride	4.0	N.D.
Chlorobenzene	4.0	N.D.
Chlorodibromomethane	4.0	N.D.
Chloroethane	4.0	6.1
2-Chloroethyl vinyl ether	20	N.D.
Chloroform	4.0	N.D.
Chloromethane	4.0	N.D.
1,1-Dichloroethane	4.0	230
1,2-Dichloroethane	4.0	N.D.
1,1-Dichloroethene	4.0	21
Total 1,2-Dichloroethene	4.0	N.D.
1,2-Dichloropropane	4.0	N.D.
cis 1,3-Dichloropropene	4.0	N.D.
trans 1,3-Dichloropropene	4.0	N.D.
Ethylbenzene	4.0	N.D.
2-Hexanone	20	N.D.
Methylene chloride	4.0	5.0
4-Methyl-2-pentanone	20	N.D.
Styrene	4.0	N.D.
1,1,2,2-Tetrachloroethane	4.0	N.D.
Tetrachloroethene	4.0	N.D.
Toluene	4.0	N.D.
1,1,1-Trichloroethane	4.0	41
1,1,2-Trichloroethane	4.0	N.D.
Trichloroethene	4.0	N.D.
Trichlorofluoromethane	4.0	N.D.
Vinyl acetate	4.0	N.D.
Vinyl chloride	4.0	5.3
Total Xylenes	4.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-4		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3817		Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-4		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040			
Attention: Dan Thomas	Lab Number:	004-3817		Analyzed:	May 9, 1990
				Reported:	May 11, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-7	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3818	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	13
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	3.7
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	4.3
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-8	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3819	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.6
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-8	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3819	Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco P.O. Drawer J Mountain View, CA 94042 Attention: Dan Thomas	Client Project ID: #7403 Sample Descript: Water, MW V-9 Analysis Method: EPA 8240 Lab Number: 004-3820	Sampled: Apr 25, 1990 Received: Apr 26, 1990 Analyzed: May 3, 1990 Reported: May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.6
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-9	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3820	Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW V-10	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3821	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	3.9
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW V-10		Received:	Apr 26, 1990
Mountain View, CA. 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3821		Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW I-1		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number:	004-3822		Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW I-1	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3822	Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, MW I-2	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3823	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.5
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	2.2
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript:	Water, MW I-2		Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number:	004-3823		Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Equipment Wash	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3825	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	3.6
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled: Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Equipment Wash	Received: Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed: May 8, 1990
Attention: Dan Thomas	Lab Number: 004-3825	Reported: May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Field Blank	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3824	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	2.5
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Field Blank	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	May 8, 1990
Attention: Dan Thomas	Lab Number: 004-3824	Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Travel Blank	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	May 3, 1990
Attention: Dan Thomas	Lab Number: 004-3826	Reported:	May 11, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	2.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Apr 25, 1990
P.O. Drawer J	Sample Descript: Water, Travel Blank	Received:	Apr 26, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	May 7, 1990
Attention: Dan Thomas	Lab Number: 004-3826	Reported:	May 11, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 22, 1990
P.O. Drawer J	Matrix Descript:	Water		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8015/8020		Analyzed:	Jun 29, 1990
Attention: Dan Thomas	First Sample #:	006-4068		Reported:	Jul 12, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
006-4068	V-11	N.D.	N.D.	N.D.	N.D.	N.D.
006-4069	V-12	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 22, 1990
P.O. Drawer J	Matrix Descript:	Water		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 3510/8015			
Attention: Dan Thomas	First Sample #:	006-4068		Analyzed:	Jul 9, 1990
				Reported:	Jul 12, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
006-4068	V-11	N.D.
006-4069	V-12	N.D.

Detection Limits:	50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript:	Water, V-11		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number:	006-4068		Reported:	Jul 12, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript: Water, V-11	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 8015 Modified	Analyzed:	Jul 5, 1990
Attention: Dan Thomas	Lab Number: 006-4068	Reported:	Jul 12, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript:	Water, V-11		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number:	006-4068		Reported:	Jul 12, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript: Water, V-12	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number: 006-4069	Reported:	Jul 12, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript:	Water, V-12		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 5, 1990
Attention: Dan Thomas	Lab Number:	006-4069		Reported:	Jul 12, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript: Water, V-12	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number: 006-4069	Reported:	Jul 12, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Water, TB-1		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3982		Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Water, TB-1	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8020	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3982	Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/L	Sample Results µg/L
Benzene	0.5	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.5	N.D.
Toluene	0.5	N.D.
Xylene	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript: Water, EW-1	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method: EPA 5030/8010	Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number: 006-3981	Reported:	Jul 18, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	1.0	N.D.
Total 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 20, 1990
P.O. Drawer J	Sample Descript:	Water, EW-1		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 2, 1990
Attention: Dan Thomas	Lab Number:	006-3981		Reported:	Jul 18, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/L	Sample Results µg/L
Benzene	0.5	N.D.
Chlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
Ethyl Benzene	0.5	N.D.
Toluene	0.5	N.D.
Xylene	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript:	Water, EW2	Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number:	006-4070	Reported:	Jul 12, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chloroethane	25	N.D.
2-Chloroethylvinyl ether	5.0	N.D.
Chloroform	5.0	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	5.0	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Total 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	5.0	N.D.
Methylene chloride	10	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 21, 1990
P.O. Drawer J	Sample Descript:	Water, EW2		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 5030/8020		Analyzed:	Jul 3, 1990
Attention: Dan Thomas	Lab Number:	006-4070		Reported:	Jul 12, 1990

AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene	5.0	N.D.
Chlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,2-Dichlorobenzene	10	N.D.
Ethyl Benzene	5.0	N.D.
Toluene	5.0	N.D.
Xylene	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jun 22, 1990
P.O. Drawer J	Sample Descript:	Water, EW2		Received:	Jun 22, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Jul 5, 1990
Attention: Dan Thomas	Lab Number:	006-4070		Reported:	Jul 12, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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AUG 24 1990

Jasco	Client Project ID:	#7403		Sampled:	Jul 26-27, 1990
P.O. Drawer J	Matrix Descript:	Water		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 3510/8015		Extracted:	Aug 1, 1990
Attention: Dan Thomas	First Sample #:	007-4840		Analyzed:	Aug 2, 1990
				Reported:	Aug 22, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
007-4840	V-4	350
007-4841	V-1	610
007-4842	V-3	150

Detection Limits:	**50**

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, V-9		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4832		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, V-8		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4833		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, I - 2		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4834		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, I-3		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4836		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, I-1	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4839	Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, V-4		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4840		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, V-1		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4841		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 27, 1990
P.O. Drawer J	Sample Descript:	Water, V-3		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4842		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 27, 1990
P.O. Drawer J	Sample Descript:	Water, V-10	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified	Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4843	Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, EW		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4844		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, TB		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4845		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, FB		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8015 Modified		Analyzed:	Aug 7, 1990
Attention: Dan Thomas	Lab Number:	007-4846		Reported:	Aug 22, 1990

ACETONE & ALCOHOLS BY GAS CHROMATOGRAPHY (EPA 8015 Mod.)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	15	N.D.
Ethanol	50	N.D.
Isopropanol	20	N.D.
Methanol	60	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, I-3		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Jul 31, 1990
Attention: Dan Thomas	Lab Number:	007-4836		Analyzed:	Aug 16, 1990
				Reported:	Aug 22, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	3.6
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, V-4	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040	Extracted:	Jul 31, 1990
Attention: Dan Thomas	Lab Number:	007-4840	Analyzed:	Aug 16, 1990
			Reported:	Aug 22, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, V-1		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8040		Extracted:	Jul 31, 1990
Attention: Dan Thomas	Lab Number:	007-4841		Analyzed:	Aug 16, 1990
				Reported:	Aug 22, 1990

PHENOLS (EPA 8040)

Analyte	Detection Limit µg/L	Sample Results µg/L
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
2,4-Dichlorophenol	2.0	N.D.
2,4-Dimethylphenol	10	N.D.
2,4-Dinitrophenol	50	N.D.
2-Methyl-4,6-dinitrophenol	50	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	20	N.D.
Pentachlorophenol	20	N.D.
Phenol	2.0	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, V-9		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4832		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.6
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maria Lee

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, V-8		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4833		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	**2.0**	**3.1**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, I-2		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4834		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	**2.0**	**3.0**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**2.0**	**2.2**
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	**2.0**	**3.0**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, V-7		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4835		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	7.5
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	3.2
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	3.4
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco
P.O. Drawer J
Mountain View, CA 94042
Attention: Dan Thomas

Client Project ID: #7403
Sample Descript: Water, I-3
Analysis Method: EPA 8240
Lab Number: 007-4836

Sampled: Jul 25, 1990
Received: Jul 27, 1990
Analyzed: Aug 3, 1990
Reported: Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript: Water, V-6	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number: 007-4837	Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, V-5		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4838		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, I-1		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4839		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript: Water, V-4	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number: 007-4840	Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	**2.0**	**12**
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	**2.0**	**240**
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	**2.0**	**38**
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	**2.0**	**48**
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	**2.0**	**5.0**
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 26, 1990
P.O. Drawer J	Sample Descript:	Water, V-I		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4841		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	5.6
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	17
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 27, 1990
P.O. Drawer J	Sample Descript: Water, V-3	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number: 007-4842	Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	2.3
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	6.4
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Jasco	Client Project ID:	#7403	Sampled:	Jul 27, 1990
P.O. Drawer J	Sample Descript:	Water, V-10	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240	Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4843	Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID: #7403	Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript: Water, EW	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method: EPA 8240	Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number: 007-4844	Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit μg/L	Sample Results μg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 24, 1990
P.O. Drawer J	Sample Descript:	Water, TB		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4845		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403		Sampled:	Jul 25, 1990
P.O. Drawer J	Sample Descript:	Water, FB		Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8240		Analyzed:	Aug 3, 1990
Attention: Dan Thomas	Lab Number:	007-4846		Reported:	Aug 22, 1990

VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2.0	N.D.
Bromodichloromethane	2.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
2-Butanone	10	N.D.
Carbon disulfide	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	2.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	2.0	N.D.
Chloromethane	2.0	N.D.
1,1-Dichloroethane	2.0	N.D.
1,2-Dichloroethane	2.0	N.D.
1,1-Dichloroethene	2.0	N.D.
Total 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis 1,3-Dichloropropene	2.0	N.D.
trans 1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	2.0	N.D.
2-Hexanone	10	N.D.
Methylene chloride	5.0	N.D.
4-Methyl-2-pentanone	10	N.D.
Styrene	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	2.0	N.D.
Toluene	2.0	N.D.
1,1,1-Trichloroethane	2.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	2.0	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl acetate	2.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Jasco	Client Project ID:	#7403	Sampled:	Jul 27, 1990
P.O. Drawer J	Sample Descript:	Water, V-3	Received:	Jul 27, 1990
Mountain View, CA 94042	Analysis Method:	EPA 8270	Extracted:	Jul 31, 1990
Attention: Dan Thomas	Lab Number:	007-4842	Analyzed:	Aug 9, 1990
			Reported:	Aug 22, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Aniline	2.0	N.D.
Anthracene	2.0	N.D.
Benzidine	50	N.D.
Benzoic Acid	10	N.D.
Benzo(a)anthracene	2.0	N.D.
Benzo(b)fluoranthene	2.0	N.D.
Benzo(k)fluoranthene	2.0	N.D.
Benzo(g,h,i)perylene	2.0	N.D.
Benzo(a)pyrene	2.0	N.D.
Benzyl alcohol	2.0	N.D.
Bis(2-chloroethoxy)methane	2.0	N.D.
Bis(2-chloroethyl)ether	2.0	N.D.
Bis(2-chloroisopropyl)ether	2.0	N.D.
Bis(2-ethylhexyl)phthalate	10	N.D.
4-Bromophenyl phenyl ether	2.0	N.D.
Butyl benzyl phthalate	2.0	N.D.
4-Chloroaniline	2.0	N.D.
2-Chloronaphthalene	2.0	N.D.
4-Chloro-3-methylphenol	2.0	N.D.
2-Chlorophenol	2.0	N.D.
4-Chlorophenyl phenyl ether	2.0	N.D.
Chrysene	2.0	N.D.
Dibenz(a,h)anthracene	2.0	N.D.
Dibenzofuran	2.0	N.D.
Di-N-butyl phthalate	10	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
3,3-Dichlorobenzidine	10	N.D.
2,4-Dichlorophenol	2.0	N.D.
Diethyl phthalate	2.0	N.D.
2,4-Dimethylphenol	2.0	N.D.
Dimethyl phthalate	2.0	N.D.
4,6-Dinitro-2-methylphenol	10	N.D.
2,4-Dinitrophenol	10	N.D.

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Jasco
P.O. Drawer J
Mountain View, CA 94042
Attention: Dan Thomas

Client Project ID: #7403
Sample Descript: Water, V-3
Analysis Method: EPA 8270
Lab Number: 007-4842

Sampled: Jul 27, 1990
Received: Jul 27, 1990
Extracted: Jul 31, 1990
Analyzed: Aug 9, 1990
Reported: Aug 22, 1990

SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene	2.0	N.D.
2,6-Dinitrotoluene	2.0	N.D.
Di-N-octyl phthalate	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Hexachlorobenzene	2.0	N.D.
Hexachlorobutadiene.	2.0	N.D.
Hexachlorocyclopentadiene	2.0	N.D.
Hexachloroethane	2.0	N.D.
Indeno(1,2,3-cd)pyrene	2.0	N.D.
Isophorone	2.0	N.D.
2-Methylnaphthalene	2.0	N.D.
2-Methylphenol	2.0	N.D.
4-Methylphenol	2.0	N.D.
Naphthalene	2.0	N.D.
2-Nitroaniline	10	N.D.
3-Nitroaniline	10	N.D.
4-Nitroaniline	10	N.D.
Nitrobenzene	2.0	N.D.
2-Nitrophenol	2.0	N.D.
4-Nitrophenol	10	N.D.
N-Nitrosodiphenylamine	2.0	N.D.
N-Nitroso-di-N-propylamine	2.0	N.D.
Pentachlorophenol	10	N.D.
Phenathrene	2.0	N.D.
Phenol	2.0	N.D.
Pyrene	2.0	N.D.
1,2,4-Trichlorobenzene	2.0	N.D.
2,4,5-Trichlorophenol	10	N.D.
2,4,6-Trichlorophenol	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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74840.JAS <33>

APPENDIX H
POTENTIAL CONDUITS INVESTIGATION

Potential Conduits Investigation

Jasco Chemical Corporation

Mountain View, California

Prepared for:

BRONSON, BRONSON, AND MCKINNON

May 1988

WAHLER ASSOCIATES

Geotechnical Engineers, Geologists, and Hydrogeologists
1023 Corporation Way
Palo Alto, California 94303
Telephone (415) 968-6250

Project JCO-104H

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POTENTIAL CONDUIT INVESTIGATION

A. INTRODUCTION

Wahler Associates (WA) was retained by Jasco Chemical Corporation to conduct a potential conduit investigation to satisfy the requirements of California Regional Water Quality Control Board (CRWQCB) Clean-Up and Abatement Order (CAO) No. 87-094, issued on August 3, 1987. This report summarizes the investigation which includes identification, location, and evaluation of public and private wells which may be potential vertical conduits for chemical migration from shallow to deep permeable, water bearing zones. This report also summarizes the potential for chemical migration through horizontal conduits within the conduit inventory region (CIR) as required by CAO No. 87-094.

1. Purpose

The potential conduits investigation was conducted to address the possibility that unsealed wells with multiple perforations and/or pervious annular gravel packs which contact areas of contaminated ground water may serve as conduits for chemical migration from shallow to deeper, permeable, water bearing zones. In addition, potential horizontal conduits such as utilities excavations, storm sewers, and the Hetch-Hetchy aqueduct have been created due to residential and industrial development within the Mountain View area. Therefore, this investigation was conducted to assess the possibility of conduits affecting the horizontal and vertical chemical migration within shallow, and from shallow to deeper permeable, water bearing zones in and around Jasco Chemical Corporation.

2. Definition of the Conduit Inventory Region

The conduit inventory region (CIR) has been defined as shown on Figures 1 and 2. The southern boundary of the CIR is Villa Street. The northern boundary is Hackett Avenue. Permanente Creek is the western boundary, and

Granada Drive is the eastern boundary. The CIR boundaries were based on the dimensions of the known A-aquifer chemical plume, in combination with recommended boundaries outlined in the February 18, 1988 letter submitted to Mr. James L. Jaffe by Mr. Steven Morse of the CRWQCB.

B. DATA SOURCE

Available records from many public and private sources were searched to obtain information on the locations of active, inactive or destroyed wells located within and in the vicinity of the CIR. A listing of the references used in this investigation is given at the end of this report.

1. Santa Clara Valley Water District

The SCVWD provided a great deal of useful information regarding the locations of active, inactive and abandoned water wells located at and in the vicinity of the CIR. A representative of WA visited the SCVWD office on Friday, March 11, 1988. Information obtained from the SCVWD on that day, includes a computer printout containing the locations and characteristics of all of the known water wells, excluding monitoring wells, located within the CIR. The listing was compiled as part of the South Bay Multi-Site Cooperative Agreement Well Inventory Investigation prepared for the CRWQCB by the SCVWD. This listing will henceforth be referred to as the well inventory data base (WID). A copy of the report prepared to assist in the use of the WID was also obtained. Although the WID was compiled using existing, available SCVWD data sources, computer printouts and copies of the following data bases and publications were obtained to cross-check the accuracy of the WID: information on registered water producing wells, active and inactive; the SCVWD well locations map for the Mountain View quadrangle; copies of the SCVWD Saltwater Intrusion Investigation reports prepared during October 1980, February 1985, and July 1985. Examination of the Saltwater Intrusion Investigation (SII) reports revealed that the Jasco CIR was not contained within the SII canvass area. In addition to the WID and the additional data sources outlined above, a copy of the monitoring wells search data base for the CIR and surrounding area was obtained. In addition, State DWR Water Well Drillers Reports for all of the monitoring wells located within and in the vicinity of the CIR were obtained from the SCVWD.

Two additional pieces of information obtained from the SCVWD were examined as part of this investigation: the as-built drawings for the improvements to Permanente Creek, and the specifications and contract documents for the improvement of Permanente Creek, 485 feet south of Villa Street to California Street. No wells or other pertinent information were found from the examination of these two sources. A complete listing of the data sources obtained from the SCVWD or examined while at the SCVWD is contained within the references section. The majority of the useful information obtained from the SCVWD was obtained from the WID and monitoring wells search computer printouts.

The entire CIR is contained within the township and range coordinate area 06S2W21. The WID printout for 06S2W16 was also obtained but not used in this investigation. The monitoring wells search output used in this investigation was also compiled using data from 06S2W21.

Historical water level data were also examined. According to the SCVWD, this information is subject to error because the water levels obtained are from old agricultural wells and the depth of perforations is generally unknown.

2. California Department of Transportation/Santa Clara County Planning Department Construction Division

The California Department of Transportation (CALTRANS) was contacted regarding the existence of wells encountered during the construction of Central Expressway. The CALTRANS public affairs office stated that Santa Clara County was responsible for the construction of Central Expressway. A representative of the Santa Clara County Planning Department Construction Division stated that all wells sealed during construction of Central Expressway are recorded by the SCVWD.

In addition, a copy of the Official Map of Santa Clara County prepared in 1902-03 was obtained from the Santa Clara County Planning Department Construction Division. This map was used to cross-check the locations of agricultural wells provided by the local well drillers contacted as part of this investigation.

3. California Department of Water Resources (DWR)

The California DWR regulates well construction and destruction within the State of California. Since 1963, the DWR requires that a water well driller's report be submitted for each well drilled which shows the location of the well and also a log of the soil boring. All DWR well drillers reports for the CIR and surrounding area have been incorporated into the SCVWD WID. The SCVWD and DWR have identical data sets for the CIR and surrounding areas.

4. Santa Clara County Health Department

A copy of the Santa Clara County Health Department (SCCHD) private well sampling program final report was obtained to verify if any of the private wells sampled as part of this program were located at or in the vicinity of the CIR. Attempts were made by the SCCHD to sample well D03, located just east of the CIR but the pump was inoperable and the attempt was abandoned. No other wells within and in the vicinity of the CIR were sampled as part of the SCCHD investigation.

5. City of Mountain View Department of Public Works

The City of Mountain View Department of Public Works provided as-built drawings and other details regarding the installation of sanitary, storm sewers and water mains. As-built drawings for a water relocation system along Central Expressway between Rengstorff Avenue and Bailey Avenue were also examined, but did not contain any well locations.

6. Pacific Bell

Pacific Bell provided maps illustrating the locations and characteristics of their underground telephone lines (main conduits). An engineer was also made available to answer any questions.

7. Pacific, Gas and Electric (PGandE)

A representative of WA visited the Cupertino PGandE office on Thursday, April 14, 1988. Location maps and project files were examined to locate any unregistered wells encountered during the installation of gas and electric mains. An engineer was also made available to answer any questions regarding their buried utilities.

8. San Francisco Water Department (SFWD)

A representative of WA met with Mr. Stan Richards of the SFWD, Milbrae office to discuss the characteristics of the Hetch-Hetchy Aqueduct (Figure 4), and information regarding the presence of unregistered wells located in the Hetch-Hetchy right-of-way within the CIR.

9. Well Drillers

Local well drillers were contacted to obtain access to files containing information about unregistered water-producing wells drilled within the CIR, as well as to obtain well logs of any registered wells within the CIR not in SCVWD files. Bob Garcia, of Garcia Well and Pump, and Frank Clough of C & N Well and Pump, made their private well log files available for inspection; however, no additional information regarding water producing wells within the CIR was obtained.

10. Other Reports and References

A copy of a report, prepared in 1986 for the Clean Water Task Force, entitled "Possible Well Locations: Selected Parts of Santa Clara Valley, California" was obtained from Weiss Associates. The CIR was not contained within any of the study areas canvassed as part of the Clean Water Task Force investigation.

A Copy of "Groundwater in the Santa Clara Valley, California", prepared in 1924 by W.O. Clark was obtained on loan from the U.S. Geological Survey. Two wells, numbers 2142 and 2143, were identified within the CIR. Well 2142 has been tentatively identified as State well number 06S2W21G03 and well 2143 as 06S2W21G04. SCVWD records state that both wells were destroyed in 1966.

C. DEFINITION AND EVALUATION OF POTENTIAL VERTICAL CONDUITS

Potential vertical conduits consist primarily of water-producing or monitoring wells. An exhaustive search was undertaken to locate wells within the CIR, which might serve as conduits between the shallow and deeper permeable zones. Historical and current data were thoroughly examined to determine if potential vertical conduits exist within the CIR that could provide a pathway for vertical migration of chemicals.

1. Water Producing Wells

The locations of active, inactive and destroyed water producing wells found within and in the vicinity of the CIR are shown on Figure 3. A listing of the characteristics of these wells are included as Table 1. The well construction details of wells located within the CIR are given in Table 2. A total of five active, inactive and destroyed water producing wells were found within the CIR (Tables 1 and 2, Figure 3). One of the wells, F01, is Jasco A-aquifer well V-4, located at the northwest boundary of the Jasco site. According to the SCVWD, two of the wells, G03 and G04, were destroyed in 1966; however, the method of destruction is unknown. These wells are located adjacent to the eastern border of the CIR, beyond the area affected by the Jasco plume. A field check by the SCVWD, reports that the locations of these destroyed wells as described in SCVWD records are now covered by a sidewalk. The two additional wells, D#1 and C#2, were identified by aerial photo interpretation as part of the South Bay Multi-Site Cooperative Agreement Investigation. A field check by a WA representative could not locate either well. The reported location of well C#2 is now a residential zone. A backyard tool shed located very close to the documented well location could possibly have been misidentified as a pump house. The reported location of well D#1 is within the Hetch-Hetchy right-of-way. There are four air intake/release valves at this location. These valves are encased in concrete, and could also have been misidentified as a water producing pump. No other water producing wells were found in the CIR as listed in the WID. Four wells located adjacent to the western boundary of the CIR are also shown on Figure 3. Three of the wells, C01, D01, and D09 have been destroyed. Well C01 was destroyed in January, 1972, well D01 during October, 1976, and D09 during April, 1973. The fourth well, C02, is reported to be an inactive well located in the Hetch-Hetchy right-of-way just west of Permanente Creek. According to the SFWD, the well was destroyed in 1974. Attempts were made to obtain the reported destruction permit; however, the permit could not be located by either the SCVWD or the SFWD. It was originally proposed that well C02 would be sampled as part of this investigation. Since the well was reported to be destroyed and could not be located, the well was not sampled.

2. Monitoring Wells

A review of the monitoring wells search computer output for township and range coordinate area 06S2W21 indicates that the only monitoring wells within the CIR are those installed as part of the Jasco investigation. The configuration of the Jasco monitoring network is shown on Figure 5. Table 3 outlines the location characteristics of the monitoring wells. Table 4 discusses the construction details of all monitoring wells within the CIR.

D. DEFINITION AND EVALUATION OF POTENTIAL HORIZONTAL CONDUITS

The direction of groundwater flow in the A-aquifer, at and in the vicinity of the Jasco site, is to the north-northeast. Thus, from current known distributions of chemicals, one can predict, with a degree of confidence, their future potential migration direction. However, if preferential pathways exist in the A-aquifer, chemicals can move in a direction not expected on the basis of the current ground water gradient. These preferential pathways include:

- natural high permeability zones
- sanitary storm sewers and water mains
- the Hetch-Hetchy aqueduct
- gas and electric lines
- telephone lines
- other buried utilities.

This section of the report presents the evaluation of all identified potential horizontal conduits and include all of the documented data.

1. Natural High Permeability Zones

Four high permeability zones have been identified by the characterization work that has been performed by Wahler Associates: The vadose high permeability zone, the A-aquifer, the A_1-aquifer, and the B_2-aquifer. Detailed descriptions of the site stratigraphy and hydrogeology may be found in the following technical reports which have been submitted to the CRWQCB:

- Section C.1 and C.2 of the Phase I Hydrogeologic Investigation submitted to the CRWQCB on June 5, 1987.

- Section C.1, C.2, and C.3 of the Phase II Hydrogeologic Investigation submitted to the CRWQCB on November 5, 1987.

- The stratigraphy and conclusions section of the Aquifer Testing Report submitted to the CRWQCB on December 21, 1987.

- Sections C.1 and C.2 of the Phase IIa Hydrogeologic Investigation submitted to the CRWQCB on March 31, 1988.

2. <u>Sanitary, Storm Sewers and Water Mains</u>

The City of Mountain View maintains separate sanitary, storm and water mains. According to the Engineering Department, information regarding the characteristics of the above-mentioned potential horizontal conduits is very sketchy because, within the CIR, installation occurred before 1960.

Existing sanitary sewers slope north towards San Francisco Bay. According to the City of Mountain View, the maximum diameter of concrete or clay pipes is approximately 30 inches. The maximum excavated depth for installation is said to be 12 to 13 feet. There is no record of the type of backfill used.

Storm drains are approximately 60 to 72 inches in diameter. The maximum excavated depth for installation is approximately 8 feet below the surface. There is no record of the type of backfill used.

Water mains are approximately 16 to 20 inches in diameter, and are located at a maximum depth of 8 feet below the surface. Again, there is no record of the type of backfill used.

Within the portion of the CIR where investigative work has been performed by Wahler Associates, the shallowest depth to groundwater encountered is approximately 24 feet. The difference between this value and the maximum depth of the sanitary and sewer excavations, 12 to 13 feet, makes it extremely unlikely that groundwater is currently or has in the recent past intersected the sewer or water main backfill material.

3. Hetch-Hetchy Aqueduct

The Hetch-Hetchy Aqueduct, oriented roughly east-west, is located approximately 700 feet north of Jasco Chemical Corporation and does not intersect the known A-aquifer chemical plume. The aqueduct, in this area, is an 80-foot wide strip of land containing two pipelines placed side by side. A schematic diagram illustrating the characteristics of the aqueduct is shown on Figure 4. The aqueduct dips beneath Permanente Creek and at that point is encased in concrete.

The remaining length of the aqueduct (within the CIR) is backfilled with a sand and native material mixture. The total excavated depth varies, but within the CIR generally does not exceed 12 feet.

Water movement within the aqueduct is gravity maintained, flowing from the east-northeast to west-southwest, oblique to the direction of groundwater flow.

The total excavated depth of the aqueduct, approximately 12 feet, combined with the aqueduct being located outside the known chemical plume area makes it unlikely that the aqueduct could serve as a potential horizontal conduit given the current hydrogeologic conditions.

4. Utilities

Pacific Gas & Electric (PGandE) provided extensive information regarding the characteristics of underground gas and electric mains throughout the CIR.

a. Gas and Electric - According to the Engineering Department, the maximum excavated depth of the gas mains is 6 feet. The actual depth varies due to residential and industrial development and associated grading. Presently, PGandE uses clean sand to backfill excavated areas; however, before the early 1960's, native materials were used to backfill excavated areas. To prevent corrosion, a cathodic protection system consisting of zinc or magnesium anodes are bonded to the gas pipes.

Electric lines within the CIR occur predominantly above-ground. Underground lines are contained within 3-inch diameter PVC pipes and are located less than 5 feet below the surface.

b. Pacific Bell - According to Ken Leach and John Diaz, engineers with Pacific Bell, it is customary to install telephone lines in conjunction with PGandE using joint trenches. Most trenches are at a maximum depth of 3 feet. However, beneath Central Expressway, two 3-1/2-inch conduits are encased in concrete with 5 feet of cover.

c. Other Potential Conduits - According to various utility company engineers, it is customary to vertically stack conduits (gas, electric, telephone, cable TV) in joint-trenches that have already been installed by PGandE.

d. The shallow depth of the gas, electric, telephone and other utilities excavations make it extremely unlikely that groundwater is currently or has in the recent past intersected the backfill material.

E. CONCLUSIONS

1. 06S2W21F01, installed by WA according to SCVWD regulations, reaches a maximum depth of 40 feet and does not penetrate the B_1-aquifer. Therefore, it is extremely unlikely that well F01 could serve as a vertical conduit for movement of chemicals in the Jasco plume.

2. 06S2W21G03 and G04 are located outside of the known A-aquifer chemical plume. These wells were destroyed in 1966 and may or may not have been sealed according to SCCHD recommendations. Since these two wells are located to the east of the known chemical plume makes it extremely unlikely that wells G03 and G04 could serve as potential conduits for vertical movement of chemicals from the Jasco plume.

3. Field evidence does not support the contention that wells C#2 and D#1 exist within the CIR. A field check of the area surrounding the photo identified revealed objects that could have been mistaken for wells or well pump houses.

4. The Hetch-Hetchy Aqueduct does not intersect the known A-aquifer chemical plume. Maximum depth of excavation is approximately 12 feet and therefore does not penetrate the A-aquifer. Therefore, it is extremely unlikely that the Hetch-Hetchy aqueduct could serve as a potential horizontal conduit for the Jasco plume within the CIR.

5. Underground utilities (gas, telephone, sewers, etc.) are shallow in nature, not exceeding 10 to 12 feet in depth. Therefore, it is extremely unlikely that utilities excavations could serve as potential horizontal conduits for the Jasco plume within the CIR.

F. LIMITATIONS

The data, information, interpretations, and conclusions contained within this report are presented specifically and solely for Bronson, Bronson, and McKinnon. The conclusions and professional opinions presented herein were developed by Wahler Associates, in accordance with the currently accepted geologic and hydrologic principles and practice. This investigation was limited by the fact that the information used in the preparation of this report was written and compiled by parties other than Wahler Associates. In addition, there was no statewide authority enforcing standards and requiring documentation for the construction and sealing of water wells prior to about 1967. Appendix A contains a chronology the State and County regulations regarding well installation and sealing methods employed in Santa Clara County.

WA cannot be held responsible for any conclusions and recommendations made by others, unless we have been given an opportunity to review such conclusions and concur in writing. The conclusions made are subject to change if additional information becomes available.

ANNOTATED REFERENCES

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

CALTRANS; 1988, Personal communication with Mr. Thatcher, Construction Division.

CITY OF MOUNTAIN VIEW, DEPARTMENT OF PUBLIC WORKS

City of Mountain View, Department of Public Works; 1966, Water System Relocation Plan, File No. 14007-3-4.

______ ; 1988, Personal communication with Tim Lee, Engineering Department.

DRILLERS

C & N Well and Pump; 1988, Personal communication with Frank Clough, owner/driller.

Garcia Well and Pump; 1988, Personal communication with Bob Garcia, former owner/driller.

PACIFIC GAS AND ELECTRIC (PGandE)

PGandE; 1970, San Jose Division Location Maps F-12-2,3 and 3349-F2, F3, F4.

______; 1988, Personal communication with Larry Berg, Engineering Department.

PACIFIC BELL

Pacific Bell; 1982, Main Conduit Location Plan. Record Nos. 2004, 2006, 2008, 2010, 2012, 2014.

____________; 1988, Personal communication with John Diaz, Engineering Department.

____________; 1988, Personal communication with Ken Leach, Engineering Department.

SAN FRANCISCO WATER DEPARTMENT (SFWD)

SFWD; 1950, Deed, A. Kelly and B.J. Kelly and the City and County of San Francisco.

____; 1988, Personal communication with Stan Richards, Milbrae Office.

SANTA CLARA COUNTY (SCC)

SCC; 1902-1903, Official Map of Santa Clara County, revised 1905, 1:25,000.

___; 1988, Personal communication with Don Marcott, Surveyor, Planning Department.

SANTA CLARA VALLEY WATER DISTRICT (SCVWD)

SCVWD, 1965, Santa Clara County Flood Control and Water Conservation District (SCCFC WCD), Zone NW-1, Permanente Creek Plan and Profile, sheets 5,6,7,28, and 29.

_____; 1980, Saltwater Intrusion Investigation in the Santa Clara County Baylands Area, California, by Thomas Iwamura, Engineering Geologist, 2nd printing, with minor corrections, December 1984. Publication was examined, but CIR is not included within study area.

_____; 1984, Field notes for Saltwater Intrusion Prevention Project, Sub-areas E & F, in Well Department Publication was examined, but CIR is not included within the study area.

_____; 1985a, Saltwater Intrusion Prevention Project, Bimonthly Progress Report No. 5, Prepared by John H. Clarke, February, 1985. Publication was examined, but CIR is not included within the study area.

_____; 1985b, Saltwater Intrusion Prevention Project, Bimonthly Progress Report No. 7, Prepared by Richard E. Kimmel, July, 1985. Publication was examined, but CIR is not included within the study area.

_____; 1987a, Well Locations Plotted by DWR - State Well Location Numbers - Mountain View, California, 15-minute Quadrangle.

_____; 1987b, South Bay Multi-Site Cooperative Agreement No. 5-130-120-1, Well Inventory, prepared for the California Regional Water Quality Control Board (CRWQCB).

_____; 1988a, Well Inventory, Section 21, Computer Printout, Well Department.

_____; 1988b, Well Inventory, Section 16, Computer Printout, Well Department; examined for CIR not within Section 16.

_____; 1988c, Requested Statistics for Registered Water Producing Wells, Computer Printout, Water Revenue Section.

_____; 1988d, Monitoring Wells Search, Computer Printout, Water Revenue Service.

_____; 1988e, Well Logs for Monitoring Wells, Water Revenue Section.

_____; 1988f, Master Active and Inactive Well Files, Water Revenue Section.

_____; 1988g, Abandoned and destroyed Well Files, Microfiches, Water Revenue Section.

_____; 1988h, Personal communication with Leslie Bejar, SCVWD Well Department.

SANTA CLARA COUNTY HEALTH DEPARTMENT (SCCHDD)

SCCHD; 1986b, Santa Clara County Private Well Sampling Program, Final Report, January, 1986.

_____; 1988, Personal Communication, Ms. Linda Crawford, Senior E.H. Sanitarian SCCHD.

OTHER REPORTS

Aqua Terra Technologies (ATT); 1987, Potential Well Conduits, Permanente Creek to Rengstorff Avenue, Colony Street to Charleston Road, Mountain View, California. Publication was examined, but CIR is not included within the study area.

Clark, W.O.; 1924, Ground Water in the Santa Clara Valley, California, U.S. Geological Survey Water Supply Paper No. 519.

Weiss Associates; 1986, Possible Well Locations Selected Parts of Santa Clara Valley, California, prepared for the Clean Water Task Force. Publication was examined, but CIR not included within the study area.

TABLE 1
WATER PRODUCING WELLS WITHIN CIR
JASCO CHEMICAL CORPORATION

State Well No.	Location	Local I.D.	Status	Abandonment Certification
06S2W21C#2	70 S. Hackett Ave./ 200 W. Farley St.	None	WA field check was unable to locate	None
06S2W21D#1	150 N. Central Exp./ 270 E. Silverwood Ave.	None	WA field check was unable to locate	None
06S2W21F01	560 North Villa St./ 160 E. Higdon Ave. Ext,	V-4	active	N/A
06S2W21G03	150 North Frontage Rd./ 15 West Granada Dr.	2142	destroyed	Yes
06S2W21G04	194 North Frontage Rd./ 20 West Granada Dr.	2143	destroyed	Yes

TABLE 1 (Continued)

WATER PRODUCING WELLS WITHIN CIR
JASCO CHEMICAL CORPORATION

State Well No.	Date Abandoned	Abandonment Action	Destruction Permit	Date Destroyed	Destroyed Well Seal
06S2W21C#2	N/A	N/A	NO	NR	NR
06S2W21D#1	N/A	N/A	NO	NR	NR
06S2W21F01	N/A	N/A	N/A	N/A	N/A
06S2W21G03	10-28-66	SCVWD Field check: side-walk now covers well area 2-7-67	NO	1966	No Record; possibly 20' - 40' cement cap
06S2W21G04	8-22-66	SCVWD Field check: side-walk now covers well area 2-7-67	NO	1966	No Record; possibly 20' - 40' cement cap

EXPLANATION:

70 S. Hackett Ave./200 W. Farley St. - well is located 70 feet south of Hackett Avenue, and 200 feet west of Farley Street.

N/A - does not apply
NR - No record

TABLE 2

WELL CONSTRUCTION DETAILS OF REGISTERED WELLS WITHIN CIR
JASCO CHEMICAL CORPORATION

State Well No.	Date Drilled	Well Log	Well Depth (feet)	Bore Diameter (inches)	Casing Diameter (inches)	Driller	Drilling Method	Gravel Pack	Screened Interval	Surface Seal
06S2W21C#2	No record	No	No record	No record	No record	No record	No record	No record	No record	No record
06S2W21D#1	No record	No	No record	No record	No record	No record	No record	No record	No record	No record
06S2W21F01	4-2-87	Yes	35	8	2	HEW Drilling	Hollow-Stem Auger	Yes, Lone Star No. 3 Sand	28'-35'; 0.010"	0'-27' Grout Bentonite
06S2W21G03	No record	No	No record	No record	7	No record	No record	No record	No record	No record
06S2W21G04	No record	No	No record	No record	7	No record	No record	No record	No record	No record

TABLE 3

MONITORING WELLS WITHIN CIR
JASCO CHEMICAL CORPORATION

State Well Number	Location	Local I.D.	APN
06S2W21C01A	78S Central Exway/473E Higdon Ave.	V-6	154 02 040
06S2W21C02A	Central Exway/18W Beatrice St. Ext.	V-7	150 21 500
06S2W21C03A	490S Wright Ave./350E Bonny St. Ext.	I-2	150 21 500
06S2W21C04A	80S Meridian Way/230E Bonny St.	I-3	150 21 500
06S2W21C05A	51N Central Exway/132E Beatrice St.	V-9	150 21 500
06S2W21F01A	436N Villa St./137E Higdon Ave.	V-3	154 02 001
06S2W21F02A	553N Villa St./127E Higdon Ave.	V-2	154 02 001
06S2W21F03A	427N Villa St./170E Higdon Ave.	V-1	154 02 001
06S2W21F04A	554N Villa St./284E Higdon Ave. Ext.	V-5	154 02 001
06S2W21F05A	150S Higdon Ave./550E Villa St.	I-1	154 02 001
Not Assigned	appx. 300S Central Exway/ 300E Higdon Ave.	V-10	154 02 001
Not Assigned	appx. 60N Central Exway/ 105E Beatrice St.	V-8	154 02 500

EXPLANATION:

APN: Assessors parcel number

CONSTRUCTION DETAILS OF MONITORING WELLS WITHIN CIR
JASCO CHEMICAL CORPORATION

State Well No.	Local I.D.	Status	Date Drilled	Well Log	Well Depth (feet)	Bore Diameter (inches)	Casing Diameter (inches)	Driller	Drilling Method	Gravel Pack	Screened Interval	Surface Seal
06S2W21C01A	V-6	Active	4-28-87	Yes	42.7	8	2	HEW Drilling Co.	HSA	Lone-Star #3 35.5'-42.7'	37.5'-42.7' 0.010"	0'-35.5' Bentonite & Grout
06S2W21C02A	V-7	Active	4-29-87	Yes	35.5	8	2	HEW Drilling Co.	HSA	Lone Star #3 22'-35.5'	24'-35.5' 0.010"	0'-22' Bentonite & Grout
06S2W21C03A	I-2	Active	8-11/14-87	Yes	54.5	13.5"-48' 7"-BOH	10-Conductor 2-PVC	Weeks Drilling	RM	Lone Star #3 47'-54.5'	49'-54.5' 0.202"	0'-47' Bentonite & Grout
06S2W21C04A	I-3	Active	8-12/21-87	Yes	56.0	13.5'-33.5' 7"-BOH	10-Conductor 2-PVC	Weeks Drilling	RM	Lone Star #3 46.5'56'	49'-56' 0.020"	0'-46.5' Bentonite & Grout
06S2W21C05A	V-9	Active	2-26/29-88	Yes	28.0	8	2	PC Exploration	HSA	Lone Star #3 22'-28'	23'-28' 0.020"	0'-22' Bentonite & Grout
06S2W21F01A	V-3[a]	Active	11-3-86	Yes	35.5	10	5	Unknown	HSA	Lone Star #3	20'-25' 0.020"	0'-17' Bentonite & Grout
06S2W21F02A	V-2	Destroyed; Permit No. 88D0051										
06S2W21F03A	V-1[a]	Active	5-24-84	Yes	48.0	NR	2	NR	NR	Aquarium #4 26'-48'	28'-47' Unknown	0-28' Bentonite & Cement Slurry
06S2W21F04A	V-5	Active	4-27-87	Yes	36.5	8	2	HEW Drilling Co.	HSA	Lone Star #3 32'-36.5'	33.5'-36.5' 0.010"	0-32' Bentonite & Grout
06S2W21F05A	I-1	Active	4-27/ 5-12-88	Yes	57.5	13.5"-41' 7"-BOH	10-Conductor 2-PVC	HEW Drilling Co. Pitcher Drilling	HSA	Lone Star #3 46.3'-57.5'	48.3'-57.5' 0.010"	0'-46.3' Bentonite & Grout
Not Assigned	V-10	Active	3-4/5-88	Yes	32.0	8	2	HEW Drilling Co.	HSA	Lone Star #3 24'-32'	25'-32' 0.020"	0'-24' Bentonite & Grout
Not Assigned	V-8	Active	2-24-88	Yes	37.0	8	2	PC Exploration	HSA	Lone Star #3 31'-37'	32'-37' 0.020"	0'-31' Bentonite & Grout
06S2W21F01	V-4[b]	Active	4-2-84	Yes	35.0	10	2	HEW Drilling	HSA	Lone Star #3 27'-35'	28'35' 0.010"	0'-27' Bentonite & Grout

[a] - Not installed by WA

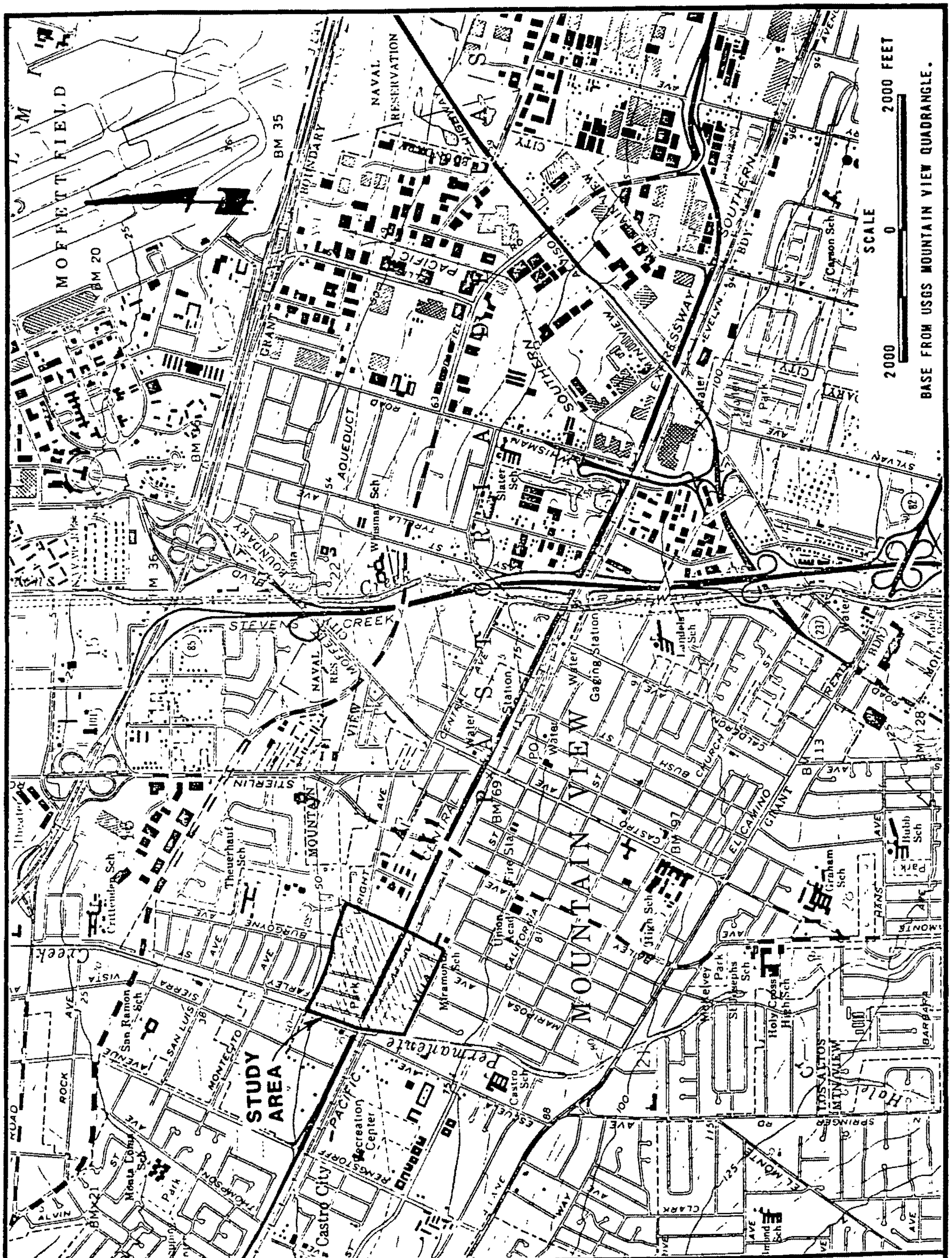
[b] - water producing well also.

NR - No record

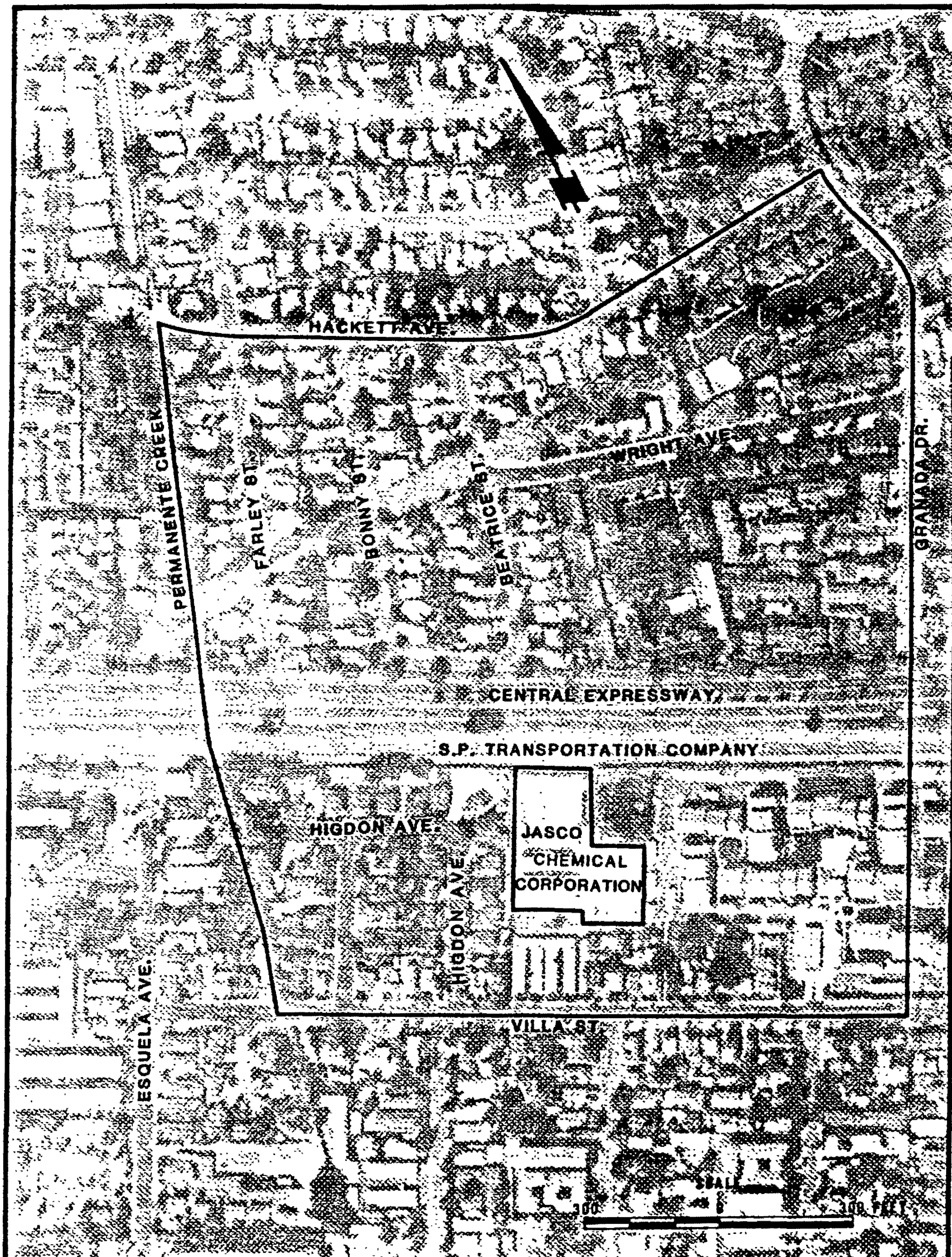
HSA - Hollow-Stem Auger

RM - Rotary Mud

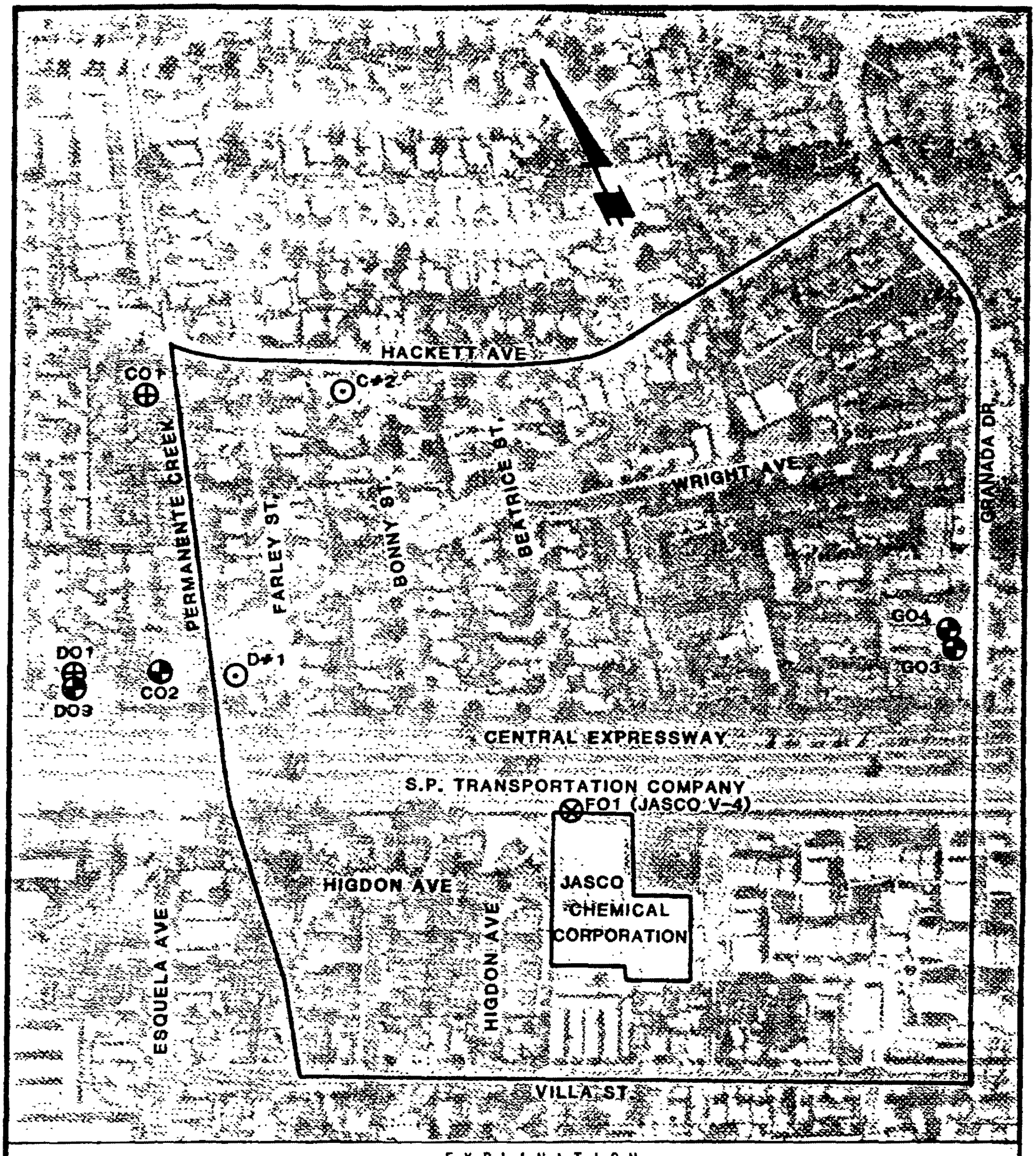
BOH - Bottom of Hole



Wahler Associates	JASCO CHEMICAL CORPORATION POTENTIAL CONDUIT INVESTIGATION	LOCATION OF STUDY AREA	
		PROJECT NO. JCO-104H	DATE MAY 1988	FIGURE NO. 1
	PALO ALTO • CALIFORNIA		



Wahler Associates	JASCO CHEMICAL CORPORATION POTENTIAL CONDUIT INVESTIGATION	CONDUIT INVENTORY REGION		
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO • CALIFORNIA	JCO-104H	MAY 1988	2



EXPLANATION

Conduit inventory region

Destroyed domestic well

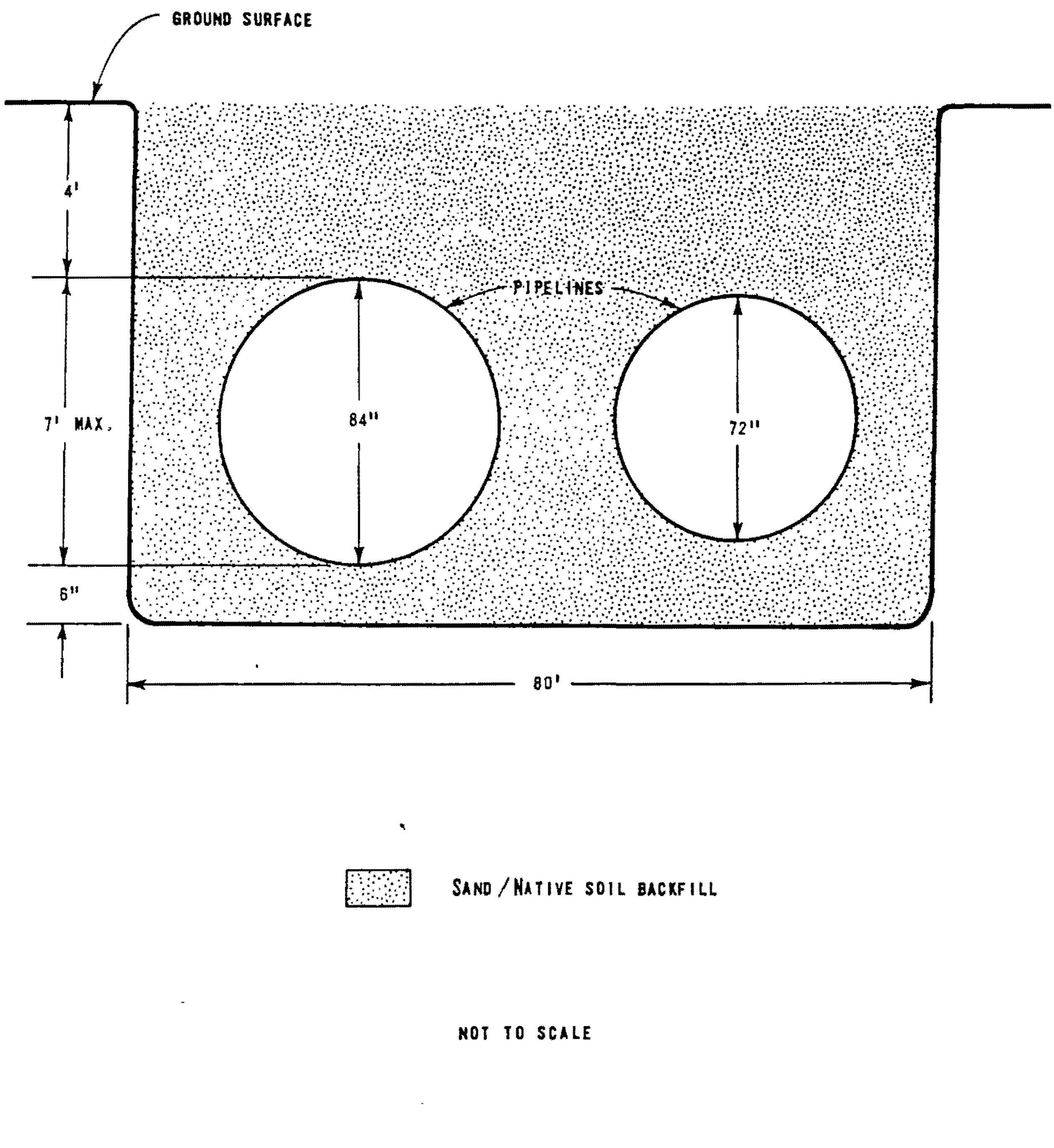
Well identified by air-photo interpretation

Active industrial well

Destroyed well - use unknown

300 0 300 FEET

Wahler Associates	JASCO CHEMICAL CORPORATION POTENTIAL CONDUIT INVESTIGATION	PRELIMINARY WELL IDENTIFICATION SUMMARY (NOT INCLUDING MONITORING WELLS)		
		PROJECT NO.	DATE	FIGURE NO.
	PALO ALTO • CALIFORNIA	JCO-104H	MAY 1988	3



Wahler Associates

JASCO CHEMICAL CORPORATION
POTENTIAL CONDUIT INVESTIGATION

PALO ALTO • CALIFORNIA

SCHEMATIC DIAGRAM OF
HETCH-HETCHY AQUEDUCT

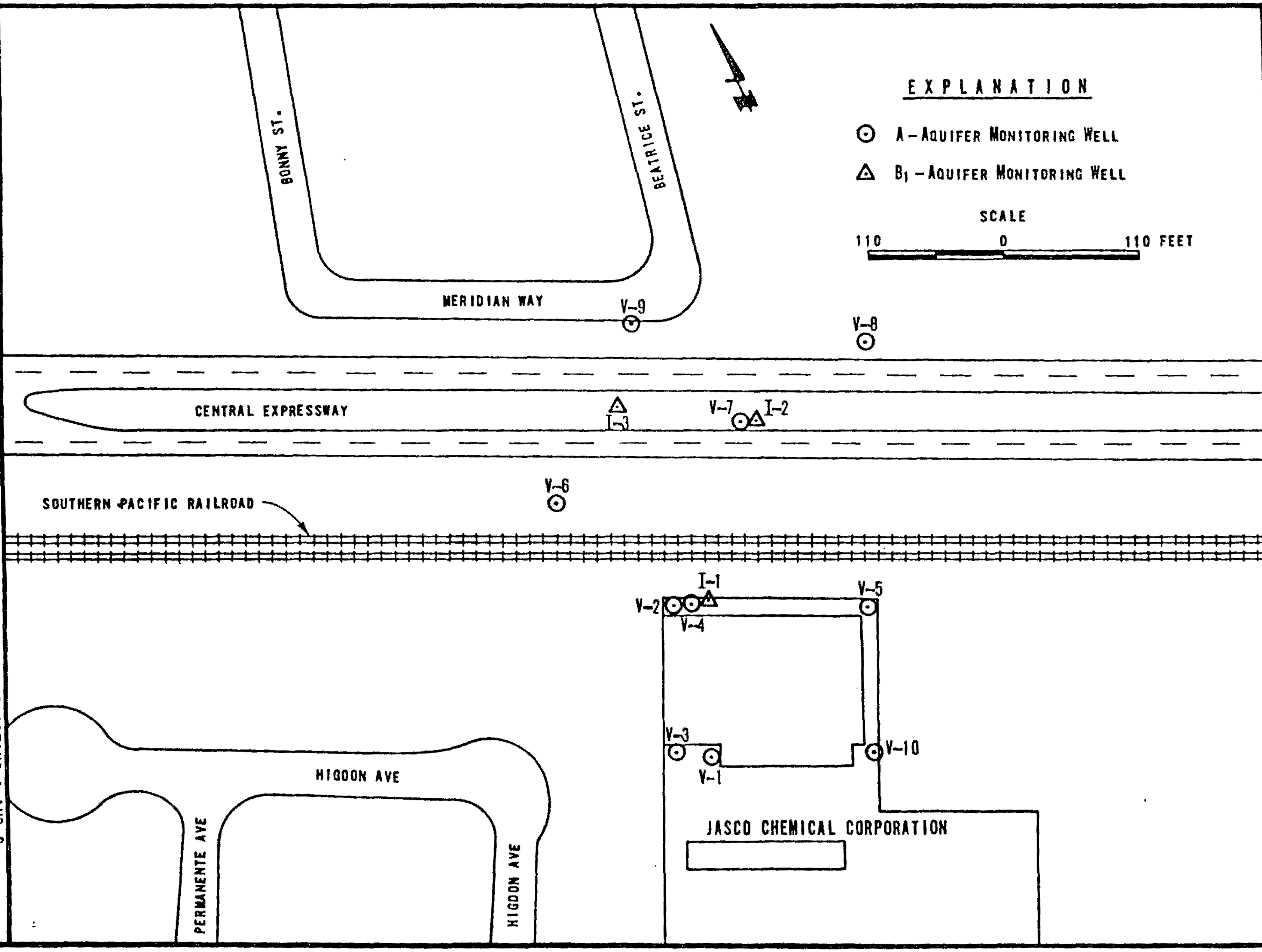
PROJECT NO.	DATE	FIGURE NO.
JCO-104H	MAY 1988	4

Wahler Associates

JASCO CHEMICAL CORPORATION
POTENTIAL CONDUIT INVESTIGATION
PALO ALTO • CALIFORNIA

LOCATION OF EXISTING A AND B_1 AQUIFER MONITORING WELLS

PROJECT NO.	DATE	FIGURE NO.
JCO-104H	MAY 1988	5



APPENDIX A

WELL CONSTRUCTION

<table>
<tr><th></th><th>PERMITS ISSUED BY:</th><th>WELLS INSPECTED BY:</th><th>RECORDS OF PERMITS &/OR INSPECTIONS</th><th>DEPTH OF SEAL REQUIREMENT</th></tr>
<tr><td>PRESENT</td><td rowspan="3">SANTA CLARA VALLEY WATER DISTRICT</td><td rowspan="3">SANTA CLARA VALLEY WATER DISTRICT</td><td rowspan="3">SANTA CLARA VALLEY WATER DISTRICT</td><td rowspan="3">* 50' - ZONES 1 & 3
150' - ZONE 2</td></tr>
<tr><td>1984</td></tr>
<tr><td>1980</td></tr>
<tr><td>1975</td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5"></td><td rowspan="5">MINIMUM STATE STANDARDS - 20'</td></tr>
<tr><td>1970s</td></tr>
<tr><td>1960s</td></tr>
<tr><td>1950s</td></tr>
<tr><td>pre-1950s</td></tr>
</table>

* IN AREAS OF KNOWN CONTAMINATION, EACH WELL REVIEWED ON INDIVIDUAL BASIS TO DETERMINE DEPTH OF SEAL.

REFERENCE: Santa Clara Valley Water District, 5-5-88

WELL DESTRUCTION

	PERMITS ISSUED BY:	WELLS INSPECTED BY:	RECORDS OF PERMITS &/OR INSPECTIONS	DEPTH OF SEAL REQUIREMENT
PRESENT	SANTA CLARA VALLEY WATER DISTRICT	SCVWD	SANTA CLARA VALLEY WATER DISTRICT	ENTIRE DEPTH OF WELL
1984		SANTA CLARA COUNTY HEALTH DEPARTMENT		50' CAP
1980				
1975	S.C.C. HEALTH DEPT. *			40' CAP
1970s				
1960s				20'
1950s				PEA GRAVEL
pre-1950s				

* LAND DEVELOPMENT PERMIT– CONDITION OF SITE APPROVAL WAS TO HAVE WELL CAPPED. (SEALED')

REFERENCE: Santa Clara Valley District, 5-5-88

APPENDIX I
BASELINE RISK ASSESSMENT

ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES IV
CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. C09008
ENDANGERMENT ASSESSMENT
FOR
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CA
EPA REGION IX
SITE ACCOUNT NUMBER: 9BF6

JACOBS ENGINEERING GROUP INC.

PROJECT NUMBER 05-B810-00

AUGUST 1989

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EXECUTIVE SUMMARY

This Endangerment Assessment represents the public health evaluation associated with the Jasco Chemical Corporation site, located in the City of Mountain View, California. Exposure pathways were defined to illustrate the potential effects upon human receptors and estimates of the risks associated with these pathways were determined.

The guidance documents used for this assessment were the U.S. EPA Superfund Public Health Evaluation Manual and Exposure Assessment Manual. The Endangerment Assessment was completed using the following procedures:

1) Analyzing high probability and low probability exposure scenarios at or near the site which would be expected to occur in the absence of remedial measures.

2) Estimating the likely range of contaminants concentrations to which individuals who participate in the exposure scenarios may be exposed.

3) Determining best estimate and maximum plausible values for human intake of contaminants from exposure scenarios developed for the site.

4) Characterizing the health effects and health risks to which individuals who are involved in the exposure scenarios may be subjected.

The criteria used to differentiate between risk levels of concern and those that are less significant were the following:

1) A non-carcinogenic risk was considered significant when a chemical intake equaled or exceeded its acceptable chronic or subchronic intake value.

2 A "one in a million" risk or one excess cancer risk in a population of 10^6 after a 70-year exposure period was considered significant in determining carcinogenic risks.

(These criteria were used to characterize and differentiate risks estimated in this Endagerment Assessment only, and should not be considered as the only criteria by which to judge and evaluate any future remediation efforts at the Jasco site.)

Under current land-use conditions of the site the only complete exposure pathway was associated with inhalation of volatilized contaminants originating from the soils. A screening analysis was conducted and it was determined that the potential cancer risk associated with inhalation of volatized contaminants was 5.8×10^{-7}. This risk is within the 10^{-4} to 10^{-7} range which is considered by USEPA to be protective of human health after remediation.

Potential carcinogenic and non-carcinogenic risks were calculated for each of the exposure scenarios associated with potential future land-use conditions (residential occupancy). The risk calculations were made for representative contaminant concentrations (best estimate) and highest measured contaminant concentrations (maximum plausible). As a result each scenario is associated with four risk calculations; best estimate - carcinogenic; best estimate - non-carcinogenic; maximum plausible - carcinogenic and maximum plausible - non-carcinogenic. Results of the findings are as follows:

1) Significant carcinogenic risks were calculated for private well water (A-aquifer) consumption and inhalation of vapors originating from contamianted ground water. Potential excess lifetime cancer risk were determined to be 3.6×10^{-3} (best estimate) and 4.0×10^{-3} (maximum plausible) for ground water ingestion, and 2.7×10^{-4} (best estimate) and 5.9×10^{-4} (maximum plausible) for vapor inhalation.

2) Significant non-carcinogenic risks were calculated for ground water ingestion using representative and highest measured contaminant concentrations.

3) Potential carcinogenic and non-carcinogenic risks associated with exposure to on-site contaminated soils via incidental ingestion or fugitive dust inhalation were not significant.

The Endangerment Assessment has demonstrated that contaminants detected at the Jasco site pose no threat to public health under current land-use conditions. However potential future land-use scenario are described which could pose higher health risks. The assessment identifies pathways that might be impacted by remedial activity and can be used to facilitate the selection of remedial action alternatives.

SECTION 1.0

INTRODUCTION

The remedial investigation conducted at the Jasco Chemical Corporation (Jasco) site has characterized the impacts of the site on the quality of ground water, surface water and soils. This Endangerment Assessment is a basis for evaluating whether or not corrective action is necessary at the site and defines goals for corrective action. The evaluation considers the nature of chemical releases from the site, the potential pathways for human and environmental exposure to the releases, and the degree to which the concentration at the point of exposure exceeds existing standards or acceptable criteria.

The purpose of the Endangerment Assessment is to evaluate the impact to public health that may result from releases from the Jasco site. The assessment considers risks based on current exposure pathways and potential risks that may result from future exposure pathways if no action is taken. A human exposure pathway consists of four elements: a source and mechanism of chemical release, an environmental transport medium such as air or ground water, a point of potential human contact with the medium and a human exposure route such as inhalation of air or ingestion of ground water at the contact point. All four elements must be present to complete a pathway. For the Jasco site, both a current exposure pathway and potential future exposure pathways are evaluated assuming a no remediation scenario.

The baseline evaluation for the Jasco site considers four areas of study: ground water quality, surface water quality, soils and air quality. The objective of the assessment is to characterize the following for each study area:

- o The potential for a release from the site.
- o The toxicity, quantity, transport and fate of the substance in each media (ground water, surface water, soils and air).
- o The presence of an exposure pathway.
- o The likelihood of an impact on public health.

This Endangerment Assessment is divided into the Site Characterization (Section 2.0), Selection of Indicator Contaminants (Section 3.0), Exposure Assessment (Section 4.0), Human Intake Assessment (Section 5.0) and a characterization of the overall risk for each exposure scenario (Section 6.0). The detailed tables, figures and worksheets used in the Endangerment Assessment are contained in Appendix A through E. Summary tables are presented in the text.

SECTION 2.0

SITE CHARACTERIZATION

Information presented in this Section was obtained from various reports prepared for Jasco by Wahler Associates. Information obtained from other sources is referenced accordingly. Detailed figures and tables documenting this section are presented in Appendix A.

2.1 Site History and Description

Jasco is located at 1710 Villa Street in Mountain View, California (see Figure 2-1). Jasco has been in operation at this address, repackaging bulk chemicals into small containers and blending chemicals to produce proprietary products, since December 1976. The Jasco site encompasses 2.05 acres and is bordered on the northeast by Central Expressway and Southern Pacific Railroad, main line right-of-way and the Villa Mariposa apartment complex on the east. Single and multi-family dwellings along Higdon Avenue and Villa Street border the Jasco site to the west and south. Access to the site is gained from the south by way of Villa Street.

The site has historically been zoned industrial but was rezoned in December 1983 as residential. The property immediately southeast was previously occupied by Pacific Press and Peninsula Tube Bending. Prior to Jasco, the site was occupied by West Coast Doors, Inc.. West Coast Doors, Inc. used the site from May 1954 to June 1975 to manufacture and paint commercial and residential doors. The site was vacant from June 1975 to November 1976.

The actual plant, offices and storage areas are located at the rear of the property and occupy approximately 31,000 square feet of the total 89,300 square feet (2.05 acres). Approximately 66 percent of the site is vacant land. The facility is a combination of tilt-up concrete production area with a built-up roof. The production area is 4,000 ft^2 and completely explosion-proof wired and heavy-duty sprinklered. The finished goods area is 12,000 ft^2 and of butler-type construction with heavy-duty sprinklers and in-rack sprinklers for storage of flammable finished goods. Figure 2-2 presents the configuration of the Jasco site and layout of the facility.

2.2 Process Description

Jasco's production process involves repackaging of bulk chemicals into small containers and blending of chemicals to produce proprietary products. Bulk solvents are received in tankers and stored in eight underground tanks as shown in Figure 2-3. Filling of the underground tanks is done by gravity. Tanks

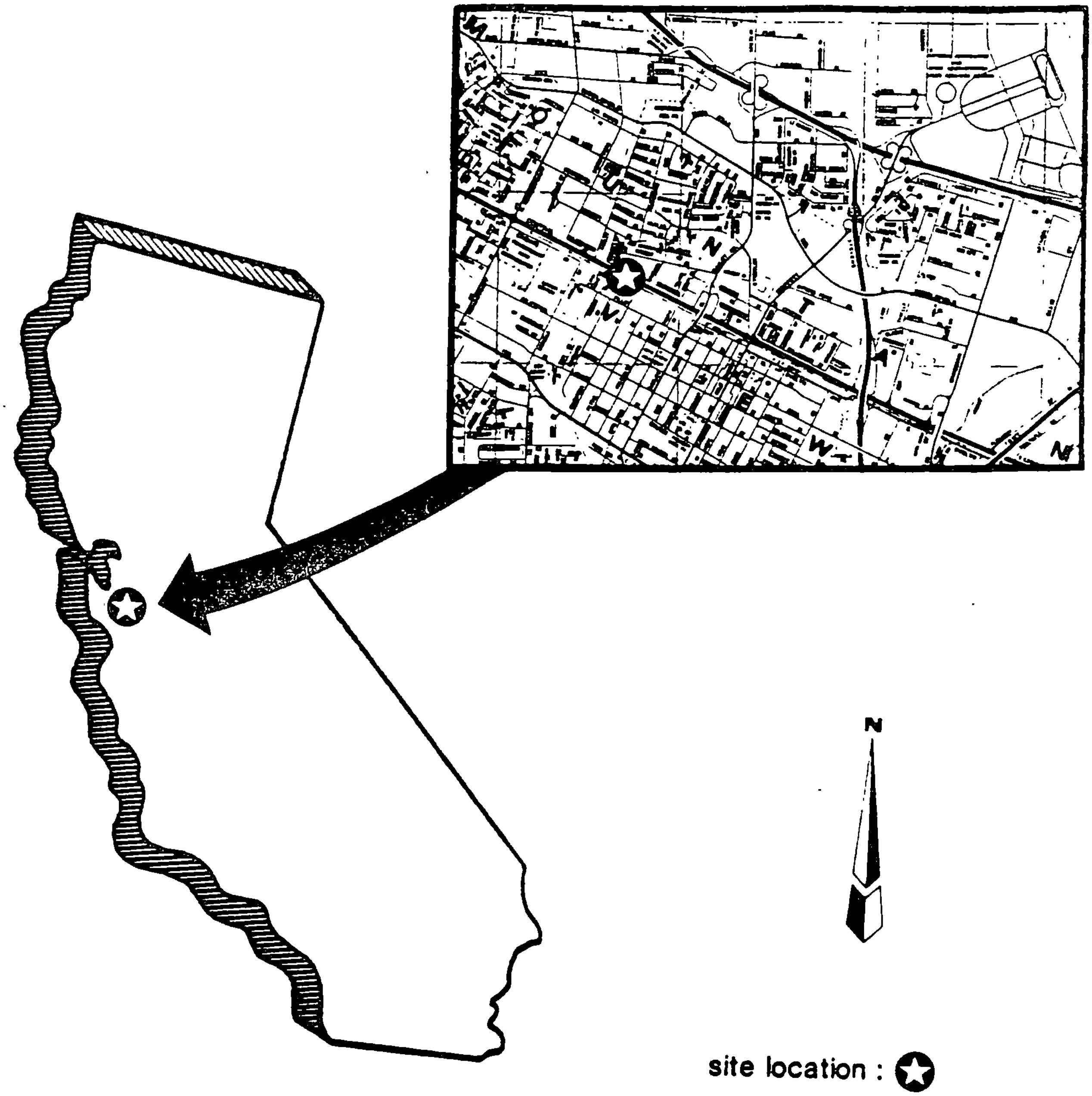
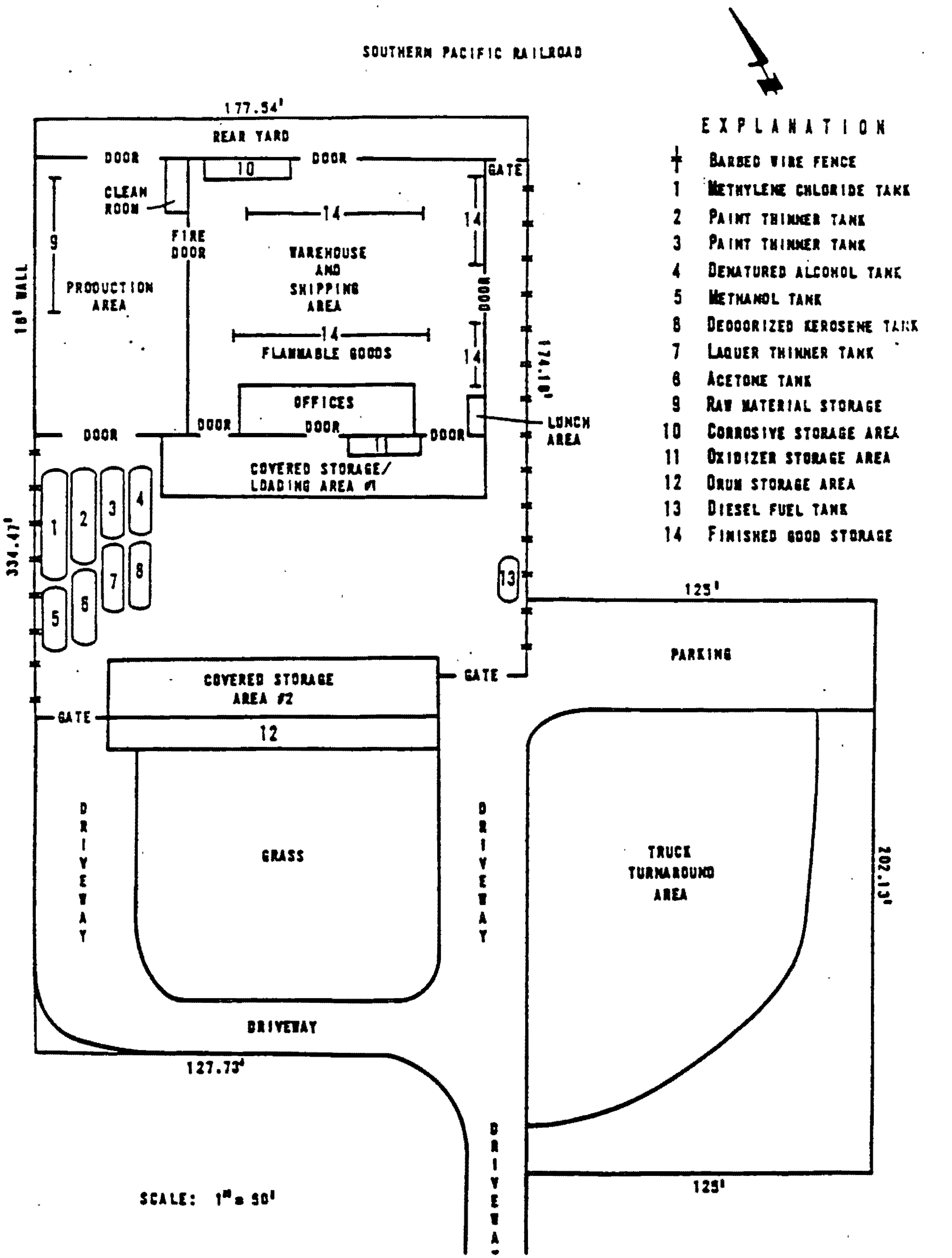


Figure 2-1 : Site Location - Jasco Chemical Corp. Site
Mountain View, CA.



JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA	SITE CONFIGURATION	FIGURE
JACOBS ENGINEERING GROUP INC.	Source: Wahler Assoc.	2-2

are checked with a dip stick at least twice a week and is the basis for reordering additional solvents (Wahler Associates, Site Inspection Report, June 1987).

The physical characteristics of the loading and unloading areas are a combination of asphalt and concrete. Putty mixer, filling machine and all above-ground tanks are located in an area that has a reinforced concrete floor with the entire perimeter bermed so as to contain any uncontrolled release (Wahler Associates, Site Inspection Report, June 1987). Figure 2-3 also presents the locations of the bermed area, drains, drainage piping, dry wells, and the on-site sump.

2.2.1 Waste Management Practices

Prior to 1983, South Bay Chemical Co., and IT Transportation were used as the waste hauling companies. Manifest records are available only from 1980 to 1983. In 1983 production piping was altered in order to segregate compatible solvents. This allowed Jasco to accumulate line washings for reuse and eliminated the generation of waste (Wahler Associates, Site Inspection Report, June 1987).

In February 1987, a 55-gallon plastic drum containing methylene chloride was spilled on the concrete portion of the loading area. The spill was reported, and cleaned up by the use of an absorbant within 10 minutes. The spill site was inspected by the City of Mountain View Fire Department, Hazardous Chemical Section, and determined that none of the material had escaped from the site. No other spills of "clean" or waste product are known to have occurred (Wahler Associates, Site Inspection Report, June 1987). There are no known areas at the Jasco site that were or are used to dispose of any material.

2.3 Environmental Setting

The Jasco site is located in the San Francisco Bay area, in a major structural depression situated between the Santa Cruz Mountains on the west and the Hayward-Calavaras fault systems on the east. Locally, the site is bounded on the west by the Santa Cruz Mountains and the Berkeley Hills and Diablo Range on the north and east.

The Jasco site is located on a gently sloping alluvial plain which terminates at San Francisco Bay, approximately 4.5 miles to the north. Permanente Creek, a northward flowing, concrete-lined and channelized stream is located approximately 600 feet to the west-northwest of the site.

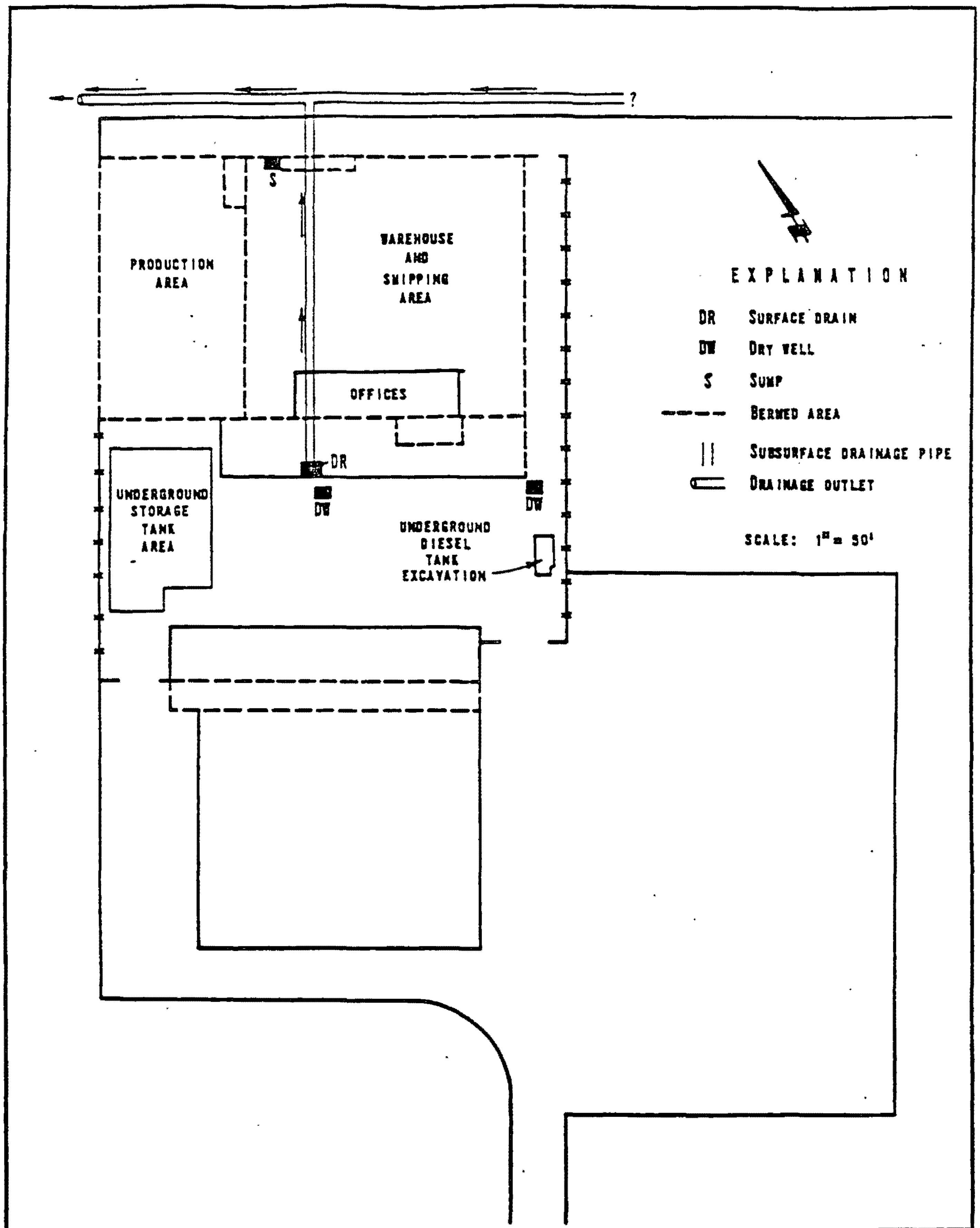
2.3.1 Hydrology

The Jasco site is at an approximate elevation of 60 feet above mean sea level. The surrounding topography slopes gently toward the north-northeast at approximately 100:1 (horizontal to vertical). Surface water on the developed portion of the site drains generally toward the north-northeast, toward the main building. Presently, a portion of the surface runoff flows into a drain which outlets off the northwest corner of the site, adjacent to the Southern Pacific Railroad Line. There, the discharged water ponds and evaporates and/or percolates into the soil. Surface runoff from the non-paved portions of the site is limited, as the site is virtually flat, non-landscaped, and has not developed a significant drainage network.

Permanente Creek, located approximately 600 feet northwest of the site, flows north-northeast toward San Francisco Bay (located 4.5 miles to the north). The creek is concrete-lined, channelized, and is used primarily for drainage and flood control.

2.3.2 Local Geology

The Jasco site is underlain by a thick sequence of unconsolidated sediments of Upper Plio-Pleistocene and Holocene ages. These sediments are considered to extend to a depth of 1,500 feet within the Santa Clara Valley basin, thinning southward to the base of the Santa Cruz Mountains. Benthic bay muds are not considered to form significant deposits in the ancestral Santa Clara Valley, due to the fact that the San Francisco Bay is considered by Helley (1979) not to have extended beyond its current shoreline. However, as sea level rose (transgression) into south San Francisco Bay, estuarine marshlands developed southward into the ancestral Santa Clara Valley. With the transgression of the marshes



JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JE JACOBS ENGINEERING GROUP INC.

SURFACE DRAINAGE CONTROL SYSTEM AND EXTENT OF BERMED AREAS

FIGURE 2-3

Source: Wahler Assoc.

landward, much of the (earlier) coarse-grained alluvial and fluvial deposits were buried by finer grained material. The estuarine deposits became laterally quite extensive during both transgressive and regressive events. Subsequently, in response to increased continental glaciation, the sea level of the ancestral San Francisco Bay dropped, and the previously deposited marsh deposits were regionally eroded, reworked, or buried by renewed alluvial and fluvial processes. Stratigraphically, this produced the general sequence of alternating fine and coarse grained materials.

Descriptions of regional geology can be found in the Endangerment Assessment for the Middlefield-Ellis-Whisman Site in Mountain View, California, prepared by Camp Dresser & McKee, Inc. by ICF-Clement, July 1, 1988. Modified excerpts from this document regarding the regional geology are located in Appendix A as Attachment 1.

2.3.3 Local Hydrogeology

The following information on the Jasco site hydrogeology is taken from a report prepared for Jasco by Wahler Associates, "Evaluation of Interim Remedial Alternatives," June 1988.

Three higher permeability aquifer units have been identified within the upper 70 feet section at and adjacent to the Jasco facility. The three higher permeability units have been designated the A-, B_1-, and B_2-aquifers. Figures A-1 and A-2 present geologic cross-sections prepared from borehole stratigraphic data. Cross-section locations are presented in Figure A-3.

The A-aquifer within the study area is encountered at depths ranging from 22.0 to 35.5 feet below ground surface. The thickness of the A-aquifer ranges from 3.0 to 13.5 feet. The bottom of the A-aquifer extends to depths of 28.0 to 42.7 feet below ground surface.

The B_1-aquifer is encountered at depths ranging from 42.0 to 47.5 feet below ground surface with the bottom of the aquifer at depths ranging from 54.5 to 57.5 feet. The thickness of the B_1-aquifer ranges from 7.5 to 11.2 feet. Analysis of pumping test data indicates that the A- and B_1-aquifers may be hydraulically connected within the study area. The B_1-aquifer is separated from the underlying B_2-aquifer by a low permeability unit designated as the B_1-B_2 aquitard.

Drilling logs indicate that the C-aquifer is approximately 150 feet below ground surface and is separated from the B-aquifer by the B-C aquitard. The B-C aquitard consists of two clay layers, 7.9 and 12.1 feet in thickness. The confining layers are separated by a 20-foot thick cemented gravel layer (refer to drillers logs, Appendix A) (Wahler Associates, Site Inspection Report, June 1987).

Based on the existing site data, a summary of the aquifer systems beneath the Jasco site is as follows:

Zone	Approximate Depths Below Ground Surface
A	22.0 - 35.5 feet
B_1	44.5 - 56.0 feet
B_2	*57.5 feet
C	150 feet

*Encountered in only one boring

Under non-pumping conditions, the movement of ground water within the A-aquifer is towards the northeast (N30XE) with an average gradient of 0.004 ft/ft. The direction of ground water flow within the B_1-aquifer is N15XE, with an average gradient of 0.003. Potentiometric surface maps of the A- and B_1-aquifers were prepared from data collected on October 7, 1987, during non-pumping conditions and are presented as Figure A-4 and A-5, respectively.

Currently, neither the A- nor B_1-aquifers are used for drinking water purposes in the vicinity of the Jasco site. The City of Mountain View operates several municipal wells in the general area which draw water from the C-aquifer.

A description of the regional hydrology is presented in Appendix A as Attachment 2.

2.3.4 Climatology

The San Francisco Bay Area has a characteristic Mediterranean climate with mild wet winters and warm dry summers. The South Bay Area exhibits considerable climatic variability compared to San Francisco with respect to temperature, cloudiness, and sunshine. The Santa Clara Valley lies in the path of winter storms which sweep inland from the North Pacific. Freezing temperatures and snow are extremely rare. Rainfall from the winter storms ranges from moderate to heavy. Climatic data from the Mountain View Corporation Yard (period of record 1975 to present) and the Los Altos Fire Department weather station (period of record 1965 to present) are the most representative for the study area. According to these records, the average annual rainfall is about 14 inches. Over 75% of the total annual rainfall for this area occurs during the winter months of November through March. The average annual wind speed is approximately 6 to 7 mph, with slightly stronger winds occuring during the summer (ICF-Clement, July 1988).

The nearest pan evaporation station is the Alamitos station in southern San Jose. Based on data from this station, and allowing for seasonal variations in both precipitation and evaporation rates, Harding Lawson Associates (1987) has estimated that approximately eight inches of precipitation per year is potentially available for recharge to the local aquifers. However, recharge to the ground water is probably low due to the high degree of urbanization (ICF-Clement, July 1988).

2.4 Remedial Activities

On August 3, 1987, the California Regional Water Quality Control Board (CRWQCB) issued Jasco Clean-up and Abatement Order (CAO) Number 87-094. The CAO contained certain provisions for bringing the facility into compliance and a schedule for completion. The Jasco site has been proposed for inclusion on the Superfund National Priorities List (NPL) by the United States Environmental Protection Agency (EPA).

Preliminary ground water and soils investigations were performed at the Jasco site to determine the nature and extent of potential contamination. The results of the investigations revealed contamination of ground water and soils with chemicals of the same type used and/or stored at the Jasco facility. Subsequent investigations were performed to determine the source and spatial distribution of the contamination problem. Tables A-1 through A-4 in Appendix A presents summaries of the analytical results for ground water, surface water and soils. Reported low and high concentrations of contaminants are presented in Tables 2-1 through Table 2-3.

Jasco and their consultants have been performing ground water remediation activities since February 20, 1987. The concentration of chemicals detected within the vadose zone are confined to a limited area near the northwestern corner of the Jasco facility. The contamination is located in a drainage swale which receives storm water runoff via a subsurface drain pipe. The contamination extends from near-surface to a depth of 21.5 feet. The chemical contamination at this area consists mainly of volatile organic compounds (VOCs) such as paint thinner, methylene chloride, and 1,1,1-TCA. Remedial

TABLE 2-1
SUMMARY OF CONTAMINANTS DETECTED
IN GROUND WATER (A-AQUIFER)

Contaminant	Highest Reported Value Concentration mg/l	Highest Reported Value Location	Lowest Reported Value Concentration mg/l	Lowest Reported Value Location
Acetone	1.80	V-2	0.003	V-8
Benzene	0.02	V-2	0.0019	V-6
Chloroethane	0.180	V-2	0.0031	V-1
1,1,-Dichloroethane	2.2	V-4	0.00069	V-8
1,1,-Dichloroethene	0.17	V-4	0.00065	V-8
1,2,-Dichloroethane	2.58	V-2	0.0010	V-3
Trans 1,2-Dichloroethene	0.013	V-2	0.0014	V-1
Ethylbenzene	0.057	V-2	0.0076	V-2
Methylene Chloride	142.0	V-2	0.0014	V-1
Methyl Ethyl Ketone	0.15	V-2	0.004	V-1
Pentachlorophenol	0.05	V-3	0.0002	V-1
Tetrachloroethylene	0.008	V-2	0.006	V-2
Toluene	0.360	V-2	0.0038	V-4
1,1,1-Trichloroethane	2.04	V-2	0.0018	V-3
Trichloroethene	0.019	V-2	0.0022	V-2
Vinyl Chloride	0.016	V-4	0.00068	V-3
Xylene	0.062	V-2	0.008	V-3

TABLE 2-2
SUMMARY OF CONTAMINANTS DETECTED
IN SURFACE WATER

Contaminant	Highest Reported Value Concentration mg/l	Highest Reported Value Location	Lowest Reported Value Concentration mg/l	Lowest Reported Value Location
Acetone	0.290	Ponded Water/ Drainage Swale	ND(1)	
Benzene	ND		ND	
Chloroethane	ND		ND	
1,1,-Dichloroethane	.056	Ponded Water/ Drainage Swale	0.0039	Discharge Pipe
1,1,-Dichloroethene	ND		ND	
1,2,-Dichloroethane	ND		ND	
Trans 1,2-Dichloroethene	ND		ND	
Ethylbenzene	ND		ND	
Methylene Chloride	1.30	Ponded Water/ Drainage Swale	0.014	Roof Downspout
Methyl Ethyl Ketone	ND		ND	
Pentachlorophenol	0.200	Ponded Water/ Drainage Swale	ND(2)	
Tetrachloroethylene	ND		ND	
Toluene	ND		ND	
1,1,1-Trichloroethane	0.700	Ponded Water/ Drainage Swale	0.0130	Ponded Water/ Drainage Swale
Trichloroethene	ND		ND	
Vinyl Chloride	ND		ND	
Xylene	0.0098	Ponded Water/ Drainage Swale	ND	

(1) Not detected.
(2) Only one value reported.

TABLE 2-3
SUMMARY OF CONTAMINANTS DETECTED
IN SOILS

Contaminant	Highest Reported Value Concentration mg/l	Highest Reported Value Location	Lowest Reported Value Concentration mg/l	Lowest Reported Value Location
Acetone	278.0	Drainage Swale	1.1	Drainage Swale
Benzene	3.0	Drainage Swale	ND(1)	Drainage Swale
Chloroethane	---(2)	---	---	---
1,1,-Dichloroethane	27.0	Drainage Swale	0.34	Drainage Swale
1,1,-Dichloroethene	13.0	Drainage Swale	ND	Drainage Swale
1,2,-Dichloroethane	3.98	Drainage Swale	ND	Drainage Swale
Trans 1,2-Dichloroethene	4.80	Drainage Swale	ND	Drainage Swale
Ethylbenzene	170.0	Drainage Swale	---	---
Methylene Chloride	3400	Drainage Swale	0.99	Drainage Swale
Methyl Ethyl Ketone	ND	Drainage Swale	ND	Drainage Swale
Pentachlorophenol	0.20	0.15ft Well V-2	0.009	20-35ft Well V-2
Tetrachloroethylene	16.0	Drainage Swale	.0067	Drainage Swale
Toluene	1700.0	Drainage Swale	61.0	Drainage Swale
1,1,1-Trichloroethane	22.0	Drainage Swale	0.11	Drainage Swale
Trichloroethene	490.0	Drainage Swale	0.088	Drainage Swale
Vinyl Chloride	ND	Drainage Swale	ND	Drainage Swale
Xylene	91.0	Drainage Swale	1.70	Drainage Swale

(1) Not Detected: Applies to contaminants where only one value was reported.
(2) Not Analyzed.

activities have included excavation of soils from the contaminated area. Figure A-6 in Appendix A presents a summary of chemical analysis results in soils at the drainage swale.

The highest chemical concentration in the A-aquifer has been detected at the northwest corner of the Jasco site, adjacent to the drainage swale where concentrations of chemicals have been detected within the vadose zone soils. Chemicals in the A-aquifer have migrated down-gradient as far as the northern shoulder of the Central Expressway. Isoconcentration maps showing the distribution of chemical concentrations within the A-aquifer are presented as Figures A-7 through A-10. The concentration of chemicals detected within the B_1-aquifer (see Figure A-11) are below DOHS recommended action levels.

Contamination of the A and B_1-aquifers from other sources in the area have been documented. The contaminated sites located down-gradient or cross-gradient from the Jasco site include: the Teledyne and Spectra Physics sites located 0.88 miles north of the site; the CTS Printex site, located 1.36 miles north of Jasco; the "Mountain View 5" sites located 1.50 miles east of Jasco; Hewlett Packard, Logue Avenue site located, 2.20 miles east of the Jasco site, and Moffett Field Naval Air Station, located 2.27 miles northeast of Jasco. The Hillview-Elanor plume is located up-gradient and approximately 1.72 miles southwest of Jasco (Wahler Associates, Site Inspection Report, June 1987).

Although this Endangerment Assessment assumes a no remediation scenario, the remediation processes that have been previously described cannot be ignored. These processes have significantly altered the collected and evaluated data, and therefore a "true" no remediation condition does not exist.

SECTION 3.0

INDICATOR CONTAMINANT SELECTION

3.1 Introduction

To evaluate the potential impacts that the Jasco site may have on human health, indicator contaminants were selected from chemical compounds identified in ground water, surface water, and soil samples obtained during the remedial investigation. In order to focus the assessment on those contaminants which potentially pose the highest risk, the contaminants were evaluated with respect to their relative toxicity, mobility, prevalence on-site and persistence. From this data, a subset of indicator chemicals was developed. This section explains the approach used to identify the contaminants on-site and the methodology used to adjust and finalize the indicator chemical list. Tables and work sheets showing the indicator containment selection process are presented in Appendix B.

3.2 Indicator Contaminant Selection Methodology

The indicator contaminant selection process involved a review of site characterization data. These include the Preliminary Ground Water Investigation Report (Questa Engineering Corp., 1984), Phase I Hydrogeological Investigation Report (Wahler Associates, 1987) and Surface Water and Soil Sampling Investigation Report (Wahler Associates 1988) as well as chemical-specific physical and toxicological data. The toxicity and physical property data were obtained from the Superfund Public Health Evaluated Manual (SPHEM) along with the appropriate methodology for indicator contaminant selection (USEPA 1986).

The selection of the indicator contaminants focuses on the toxicological properties of the contaminants detected in ground water, surface water and soil. The final list of the indicator contaminants provides a cross section of carcinogenic and non-carcinogenic contaminants that are representative of the most toxic, persistent and mobile contaminants identified through monitoring.

The indicator contaminants were selected from a list of contaminants known to be present at the Jasco site. This list is presented in Table B-1 and was developed from a review of historical documents and available site characterization data. From this list the initial indicator contaminants were selected. Aliphatic hydrocarbon mixtures such as paint thinner and lacquer thinner were not evaluated in the indicator scoring process except when the components of these compounds were analyzed for separately. Gasoline was not represented in the indicator scoring process as it contains aromatic hydrocarbons such as, ethylbenzene and xylene. Individual components were sometimes analyzed for and when available, the data were considered in the scoring process. Contaminants that were infrequently detected during a series of testing programs and/or at low concentrations were not considered representative of site conditions, therefore they were not included on the initial indicator contaminant list.

Concentrations of the contaminants were identified as maximum and representative (mean) concentrations observed during remedial investigation activities. Toxicity data for each contaminant were compiled and reviewed.

Indicator scores for each contaminant were calculated by multiplying the maximum and representative concentrations by the toxicity constant for the specific environmental media. Indicator scores and factors related to environmental mobility and persistence and other chemical and physical characteristics were compiled for each contaminant. The final selection of indicator contaminants was made on the basis of the indicator scores and environmental mobility and persistence.

The specific selection process for indicator chemicals is described in SPHEM (USEPA 1988). Each step in the process is documented in Tables B-1 through B-7. The final indicator contaminants selected include potential carcinogens and non-carcinogens and contaminants exhibiting both qualities. Table 3-1 presents a list of the final indicator contaminants selected.

3.3 Health Effects of Indicator Contaminants

The following presents a summary of the adverse health effects associated with exposure to the individual indicator contaminants. Extensive discussions of the toxicological properties and regulator criteria are presented in Appendix B as Attachment 1.

1,2-Dichloroethane

Human data on subchronic oral toxicity of 1,2-Dichloroethane (1,2-DCA) are not available, and the only available animal data provide inconclusive evidence that effects on the immunological systems of rats and mice are due entirely to 1,2-DCA. However, subchronic inhalation studies in animals have identified rabbits as the most resistant and guinea pigs as the most sensitive to the adverse effects of 1,2-DCA (Spencer et al. 1951). Large doses of 1,2-DCA given to rats have led to high mortality rate in males and females due to toxic, not carcinogenic, effects (USEPA 1984). Chronic occupational exposures to 1,2 DCA have been documented. In most cases inhalation of 1,2-DCA has produced

TABLE 3-1

FINAL INDICATOR CONTAMINANT LIST

Indicator Contaminant	Carcinogen	Non-Carcinogen	Ranking(1) Potential Carcinogens	Non-Carcinogens
1,2-Dichloroethane	X		1	5
1,1-Dichloroethene	X	X	3	2
Trichloroethene	X		4	2
Vinyl Chloride	X		5	6
Benzene	X		6	10
Tetrachloroethylene	X	X	7	16
Methylene chloride	X	X	2	3
1,1-Dichloroethane		X	---	4
Pentachlorophenol		X	---	8

(1) Ranked by maximum indicator score values.

symptoms such as nausea, vomiting, anorexia, irritation of the eyes and respiratory tract (USEPA 1984c).

Animal bioassays provide significant data on the carcinogenic potential of 1,2-DCA. In a 1978 NCI Study it was found that oral doses of 1,2-DCA given to rats produce various tumors in male and female rats (USEPA 1984c). No date are available on the teratogenic effects of oral or inhaled 1,2-DCA in humans or of oral 1,2-DCA in animals. Animal data on inhaled 1,2-DCA have been inconclusive (USEPA 1984c).

1,1-Dichloroethylene

1,1-Dichloroethylene (1,1-DCE) is commonly known as vinylidene chloride. Animal studies, conducted since the early 1960s, have provided almost all of the information from which human effects can be assessed. Subchronic inhalation data have revealed that continuous exposure to concentrations up to 395 mg/m3 result primarily in liver and kidney damage in rats, guinea pigs and monkeys. High exposure to 1,1,-DCE in drinking water appears to produce adverse liver changes in male and female rats (USEPA 1984d).

Animal bioassays with respect to oral treatment of rats and mice with 1,1-DCE have not found evidence of carcinogenicity. However, inhalation studies on rats and mice have demonstrated a possible relationship between mammary tumors in both species and kidney tumors in male mice (Maltoni et al. 1980). Oral studies on the teratogenicity and reproductive effects have been inconclusive, whilst inhalation studies on rats have found fetotoxic effects (Murray et al. 1979).

Trichloroethylene

Inhalation exposure to trichloroethylene (TCE) 2900 ppm has produced lethality in humans and a single oral dose of 7000 mg/kg has also been reported to be lethal to humans (ATSDR 1988b). The primary target organ effected by inhalation exposure is the central nervous system (ATSDR 1988b). Inhalation studies in rats and mice found acute and intermediate duration exposure have produced liver enlargement, increased kidney weight and some liver cell alterations (Kjellstrand et al. 1983). Animal oral studies have suggested adverse effects to the immune system (Tacker et al 1982).

Human studies on the carcinogenicity of TCE are reported in the literature for inhalation exposure, but not oral exposure. In particular, several epidemiological studies completed between 1978 and 1985 found significant excesses of cancer above background with the exception of bladder cancer and lymphoma in one study (ATSDR 1988b), there is inconclusive data available on the developmental toxicity of oral or inhaled TCE to humans. Inhalation studies in rats have found that TCE is fetotoxic, decreases fetal weight and increases litter resorption. Oral exposures to TCE have shown alteration in male rat mating behavior and reduced prenatal survival rate in mice (ATSDR 1988b).

Vinyl Chloride

Inhalation exposure to vinyl chloride has been reported as lethal in high (unquantified) concentrations. Animal studies on rats and mice have indicated that both inhalation and oral exposure to vinyl chloride decreases longevity (ATSDR 1988).

Occupational epidemiology has led to the association of vinyl chloride exposure via inhalation, with various tumors including liver, brain and lung (ATSDR 1988b). Studies in rats and mice indicate that the carcinogenicity of vinyl chloride is manifested as an increased incidence in liver angiosarcomas in rats and lung cancer in mice even at low level inhalation exposures such as 50 ppb (ATSDR 1988c). Human data on inhalation exposures show that there may be an increased likelihood of fetal loss, and alterations in sexual function in both sexes (ATSDR 1988c).

Benzene

Accidental inhalation of benzene by humans has led to limited information on its lethality. It has been suggested that a level of 20,000 ppm for 5-10 minutes (continuous exposure) is an acutely lethal dose (Sandmyer 1981). Studies on rats suggest benzene inhalation has a low acute toxicity. There is a wide range of oral lethal doses reported for humans, the highest being 428 mg/kg (ATSDR 1987). Oral and inhalation studies on rats and mice have led to the conclusion that the systems most affected by benzene are primarily the hematopoietic and immune systems, and in some instances, the nervous system (ATSDR 1987).

Several epidemiological studies have been conducted since 1978 and these have been the basis for the assessment of the risk of leukemia from benzene exposure (ATSDR 1987). Inhalation exposure data revealed a unit risk of 2.6 X 10-2 for leukemia. Benzene has been found to be potentially fetotoxic to mice and rabbits, with effects such as decreased fetal weight evident when exposed to approximately 155 ppm via inhalation (ATSDR 1987). No data are available on oral or dermal exposure routes and no human data are available.

Tetrachloroethylene

Inhalation studies on the lethality of tetrachloroethylene (PCE) in rats and mice have indicated decreased longevity in both species, at high concentrations (1600-1750 ppm) over extended periods of exposure (14 days-13weeks) (ATSDR 1988c). The primary target organs effected by PCE exposure are the central nervous system, liver and kidney.

Inhalation exposure to PCE has been found to result in an elevated mononuclear cell leukemia rate in rats of both sexes and an elevated hepatocellular carcinoma incidence in mice of both sexes (NTP 1986). Animal data on the results of inhalation exposure to PCE showed mice to have an increased number of embryotoxic effects such as split sternabrae and an increased percentage of fetal resorption (ATSDR 1988a).

Methylene Chloride

The only animal study on oral subchronic exposure to animals defined a no-observed-effect-level of 12.5 mg/kg/day in rats (USEPA 1983). Subchronic inhalation exposure to methylene chloride in rats, mice and monkeys appears to be associated with liver and kidney lesions (USEPA 1983). Reported occupational exposure to methyl chloride involved symptoms ranging from mild light headedness to toxic incephalosia following five years of direct contact with the compound daily. A 1983 study (Ott et al.) found no increase in mortality, in men and women, due to cardiopulmonary disease or malignant neoplasm associated with methyl chloride exposure.

Oral exposure bioassays on both rats and mice have found methyl chloride to produce a small but significant increase in the incidence of hepatocellular tumors leading to EPA to conclude the compound has "borderline carcinogenicity" (USEPA 1984f). Animal studies on rats and mice have found significant reductions in fetal body weight and some accelerated bone development in the respective species (USEPA 1984f).

1,1-Dichloroethane

Very few studies on animals have been completed, but inhalation exposures of 1000 ppm to cats revealed renal alterations when exposure continued for five days per week for thirteen weeks. Oral exposure studies in rats have found that sustained high levels of exposure to 1,1-Dichloroethane

(1,1-DCA) produces significant increase in mortality rate and associated renal damage (USEPA 1984b).

Bioassays conducted on rats have found significant increases in mammary adenocarcinoma incidence following chronic oral exposure to 1,1-DCA (USEPA 1984b). However other carcinogenicity tests have failed to find a relationship between 1,1-DCA and tumor incidence (USEPA 1984b). Studies on rats exposed to 1,1-DCA during gestation, via inhalation, show significant alteration in bone ossification of the offspring (Schwetzer et al. 1974).

Pentachloraphenol

Reports describing PCP poisoning in workers or from improper use of PCP-containing products in the home by individuals indicates that brief exposure to high levels of PCP can cause adverse health effects on the liver, kidney, skin, blood, lungs, nervous system, gastrointestinal tract, and death. Long-term exposure to lower levels of PCP can result in damage to liver, blood and nervous system, but the routes of exposure (dermal, oral, inhalation) have not been separated.

There is no convincing evidence from epidemiological studies that indicate that PCP produces cancer in humans. Case reports suggest a possible association between cancer (Hodgkin's disease, soft-tissue sarcoma and acute leukemia) and occupational exposure to technical PCP. (Fingerhut et al., 1984; Greene et al., 1978; Roberts, 1983). However in all these cases the possibility of concurrent exposure to other toxic substances cannot be excluded.

Evidence does exist from animal studies to consider PCP a probable human carcinogen. The best evidence comes from a recent study conducted by the National Toxicology Program (NTP, 1988). The study compared the carcinogenic effects of two PCP preparations, TG-penta and Dowicide EC-7, by oral exposure to mice for two years. EC-7 contained lower levels of the toxic impurities debenzo-p-dioxins and debenzofurans. The incidence of hepatocellular adenomas/carcinomas, adrenal medullary pheochromocytomas (benign and malignant) and hemangiomas/hemangiosarcomas (predominantly in the spleen and liver) was significantly increased in both studies in one or both sexes. In other carcinogenicity studies of various polychlorniated debenzo-p-dioxins only hepatocellular tumors were seen, therefore it can be concluded the PCP itself possesses oncogenic activity.

SECTION 4.0

EXPOSURE ASSESSMENT

4.1 Introduction

The purpose of the Exposure Assessment section of the Jasco Endangerment Assessment is to determine the extent to which the populations surrounding the Jasco site may be exposed to the contaminants released into the environment as a result of past and current Jasco depositions. To accomplish this objective, the following items were evaluated.

- o Study area characterization
- o Potential exposure medias
- o Potential exposure pathways

Once complete pathways were determined, exposure point concentrations of indicator contaminants were determined.

4.2 Study Area Characterization

The study area for this Endangerment Assessment encompasses approximately 138 acres, bounded by Mariposa Avenue on the east, Euscala Avenue on the west, Highway 101 on the north and California Street on the south (see Figure 4-1). The study area is not related to the extent of the Jasco site impact and actually encompasses an area larger than the impacts identified in the remedial investigation. Existing land-uses for the Jasco study area were identified by a field survey. Although the study area primarily supports residential areas, an industrial area and commercial area does exist. Residential areas comprise approximately 90% of the study area. Current City of Mountain View ordinance designate the entire study area as residential zoning.

The Jasco site is the only remaining industrial complex in the study area. Jasco's conditional use permit from the rezoning requires that the company evacuate its present location by 1992. The Jasco site comprises approximately 1.5% of the total study area. One business office complex is located within the study area. The complex is located southeast of Jasco and occupies approximately 8% of the total study area.

The following population data was obtained from information obtained in an Endangerment Assessment report for the Middle-Ellis-Whisman (MEW) site, located approximately 1.5 miles east of the Jasco study area. The report included population data within a three mile radius of the MEW site which includes the Jasco study area. While data from the Endangerment Assessment report

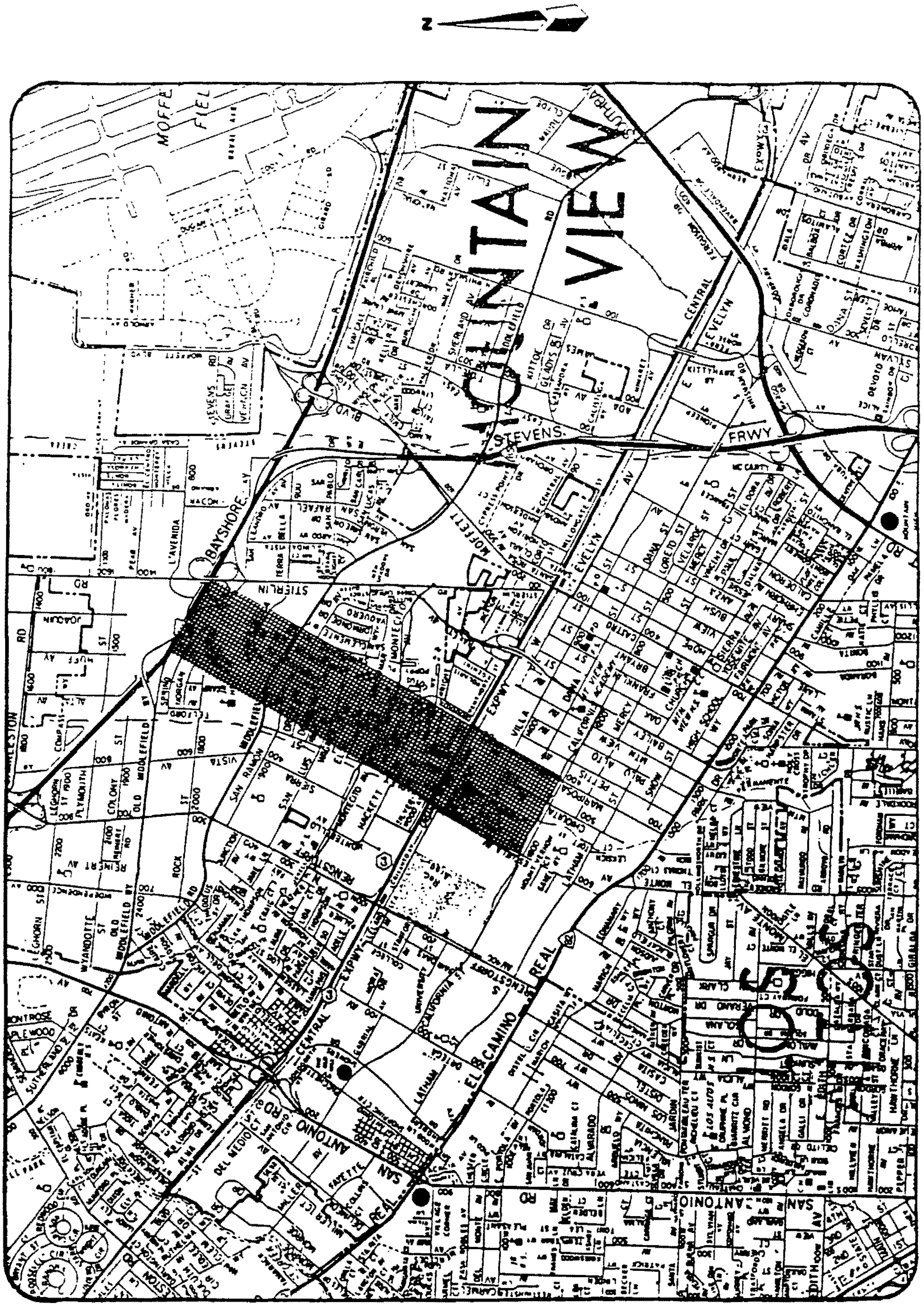


Figure 4-1
Jasco Endangerment Assessment
Study Area

encompasses an area larger than the Jasco study area, the data can be used to evaluate general population trends.

The current population within the Jasco study area is approximately 900, with an annual growth rate of 0.2%. The current average family size is three with no major changes forecast for 1992. The current median and average ages are 36.6 and 38.6, respectively. Adults over 44 years of age comprise 53.4% of the population, with adults in the 30-40 year range comprising 30% of the population. Most children are in the 5-11 year old range with 7% of the total population, followed by the 0-4 year old range with 5% of the total population, and the 12-16 year old range with 4.6% of the total population.

4.3 Potential Exposure Media

At the Jasco site, contaminants have been detected in surface waters, ground water, and soils. Since the indicator contaminants have been found in these media, they are suspected of contributing to the potential exposure of a receptor. The following sections provide insights and evaluation of the particular medias and qualitatively address the potential exposure routes.

Information to date indicates that the primary concern at the Jasco site is the potential for, or existence of, ground water contamination. Because of this, special emphasis is placed on describing and evaluating the ground water pathway.

4.3.1 Ground Water Exposure Media

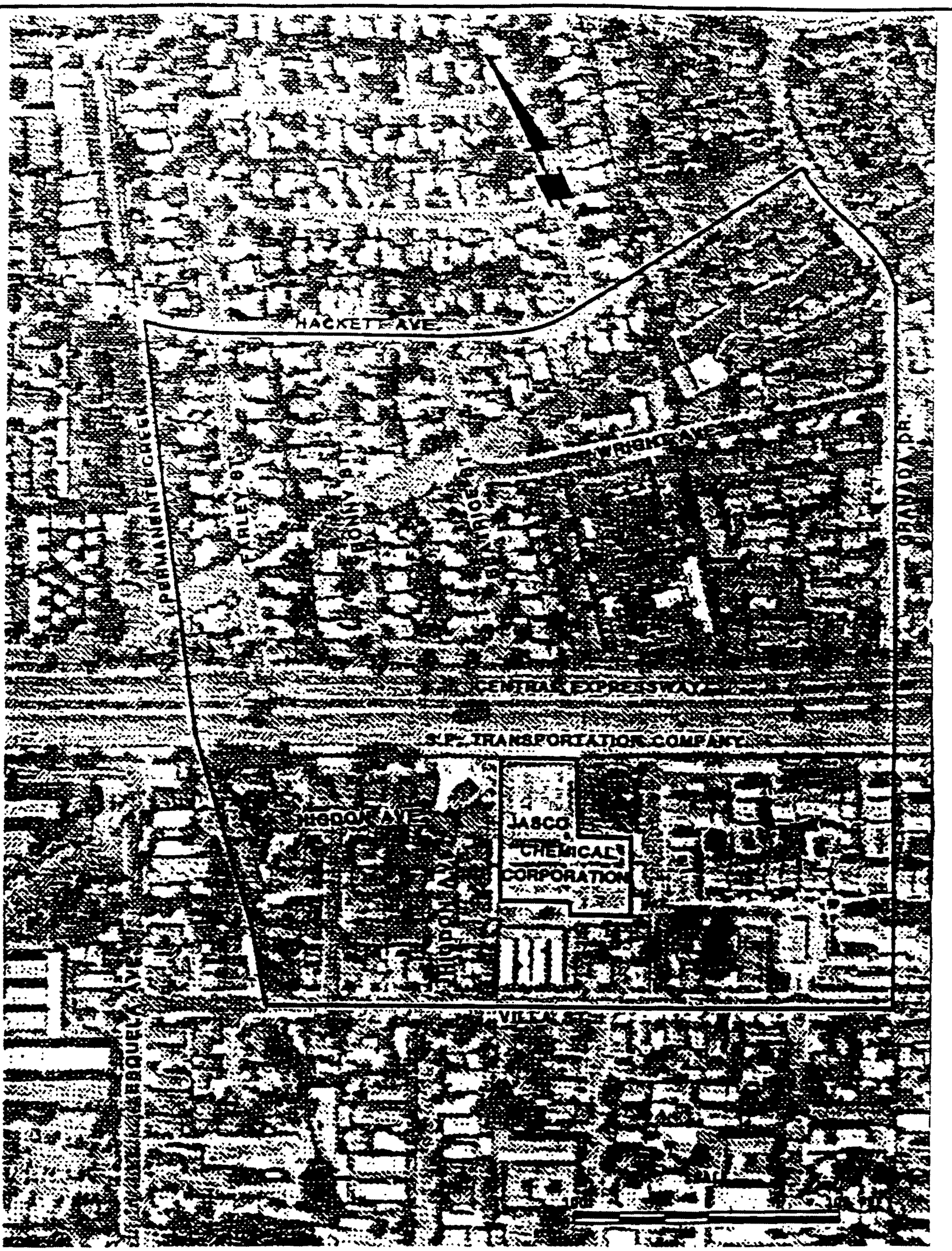
Ground water is regulated by the Santa Clara Valley Water District (SCVWD) with a fee charged for ground water withdrawal. Neither the A or B,-aquifers are currently used for drinking water purposes in the vicinity of Jasco. SCVWD records indicate that there may be old agricultural wells in existence within one mile of the Jasco site. However, a large percentage of the agricultural and private wells in Mountain View have been abandoned under the supervision of the SCVWD. Currently agricultural uses of water are practically non-existent in Mountain View.

It does not appear that contaminants will migrate to any of the City of Mountain View's municipal water supply wells. This is based on the current locations of these wells with respect to the contaminant plume trend, regional hydraulic gradients, and hydrostratigraphic constraints. The municipal water supply wells are completed within the C-aquifer which occurs at a depth of approximately 150 feet below the surface and is separated from the A-aquifer by several aquitard units of which the most noteworthy is the B-C aquitard. The B-C aquitard has never been encountered at the Jasco site due to the lack of any deep exploratory drilling. The B-C aquitard has been investigated thoroughly by Harding Lawson Associates for a study area located approximately two miles east of the Jasco site. Harding Lawson indicates the B-C aquitard to be generally 20-40 feet thick, consisting predominantly of stiff silty clay with occasional sand lenses. Therefore, the C-aquifer is effectively isolated from the overlying aquifers by the B-C aquitard with the exception of where local conduits may provide hydraulic interconnection. (Harding Lawson Associates, 1987).

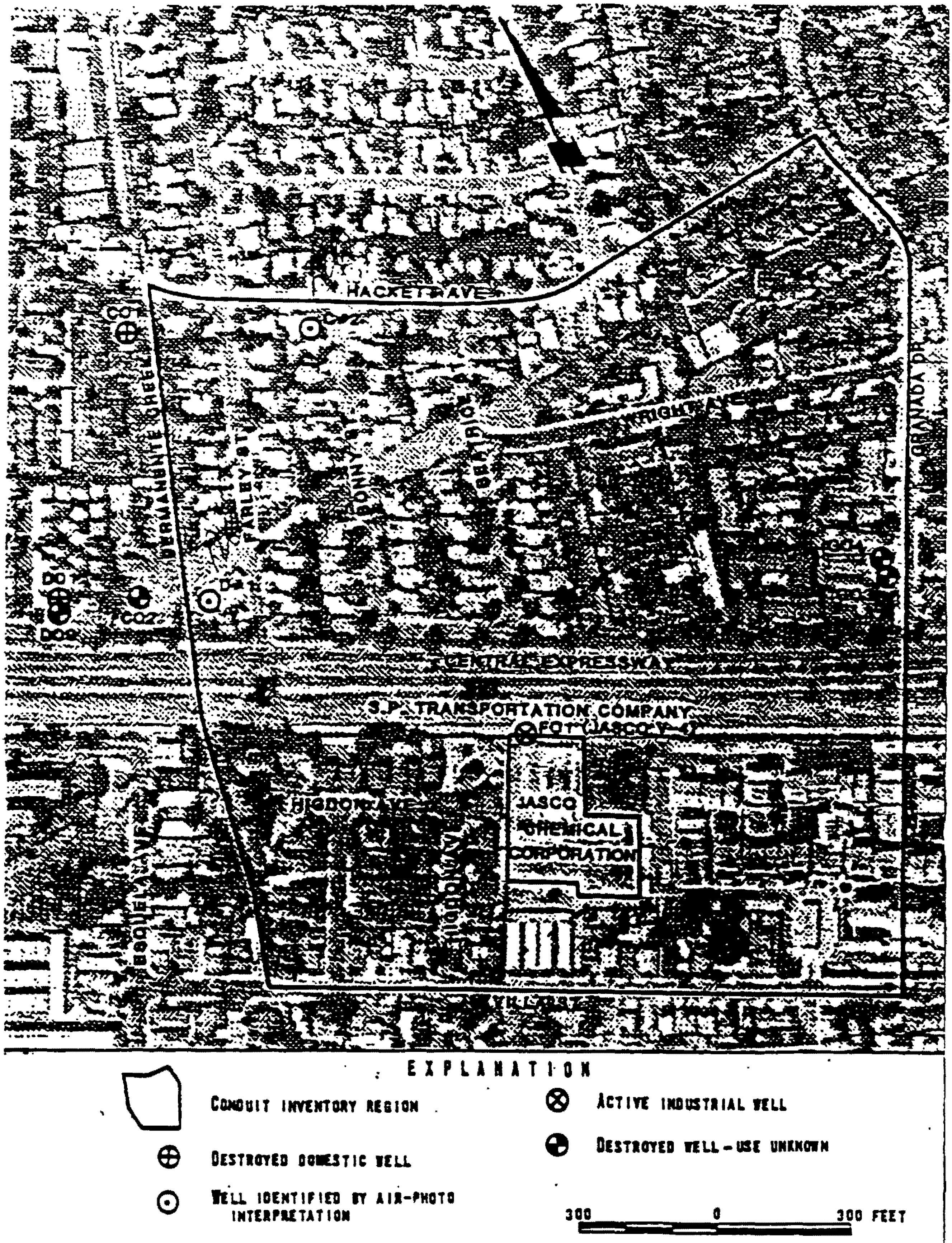
A potential conduits investigation was performed by Wahler Associates for Jasco to satisfy the requirements of Cleanup and Abatement Order (CA0) No. 87-094. The objective of the investigation was to assess the potential for contaminants to migrate from shallow to deeper ground water resources via unsealed or improperly sealed wells with multiple perforations or annular gravel packs which may be in contact with contaminated ground water. The investigation also included an assessment of the potential for horizontal migration of contaminants via activities resulting from residential and industrial development such as utilities excavations, storm sewers, and the Hetch-Hetchy aqueduct. The conduit inventory region is bounded on the south by Villa Street; on the north by Hackett Avenue; on the west by Permanente Creek; and on the east by Granada Drive (see Figure 4-2). The investigation indicated a total of five active, inactive and decommissioned water producing wells within the inventory region (see Figure 4-3). One of the wells (F01), is the Jasco A-aquifer monitoring well V-4. The SCVWD indicated two other wells (G03 and G04) were decommissioned in 1966, with the method of decommissioning unknown. These wells are located on the eastern border of the inventory region and should not be affected by the Jasco plume. The two additional wells seen on Figure 4-3 (D#1 and C#2) were identified by aerial photo interpretation as part of the South Bay Multi-Site Cooperative Agreement Investigation. A field check by Wahler personnel failed to locate these wells. The investigators indicated that a tool shed near the location of well C#2 and a cement encased housing for intake/release valves associated with the Hetch-Hetchy aqueduct near the location of well D#1 may have been mistakenly identified as well pump houses. The investigators indicated there were no other water producing wells located within the inventory region. The only monitoring wells located in the inventory region are the Jasco site monitoring wells.

Contaminant Release and Transport Mechanisms in Ground Water

Ground water flow and contaminant transport follow complex patterns in alluvial/fluvial sediments such as those of the Santa Clara Valley. This is primarily due to the variations in the materials and physiochemical interactions between subsurface materials and the chemical solutes in ground water.



JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA	CONDUIT INVENTORY REGION	FIGURE
JACOBS ENGINEERING GROUP INC.	Source: Wahler Assoc.	4-2



JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA	PRELIMINARY WELL IDENTIFICATION SUMMARY (NOT INCLUDING MONITORING WELLS)	FIGURE
JE JACOBS ENGINEERING GROUP INC.		4-3

29

Source: Wahler Assoc.

Hydraulic conductivity is a measure of the relative ability of an aquifer to transmit water (also commonly known as coefficient of permeability). The permeability of sand and gravel is typically several orders of magnitude higher than that of silt and clay. Therefore, lenses and layers of sand and gravel are a preferential pathway for ground water flow and contaminant transport, with silt and clay layers serving as barriers to this flow (confining layers). In most cases, the majority of ground water flow is horizontal, following the subhorizontal orientation of the high-permeability layers. Some vertical flow occurs through the confining layers separating permeable zones with different hydraulic heads.

Detailed studies of the hydraulic characteristics of alluvial sediments demonstrate that estimates of contaminant flow based on measured hydraulic conductivities of specific units are often unreliable. Contaminant migration in complex alluvial environments are best defined by sampling and analysis of monitoring wells.

Contaminant Migration

The dominant contaminant transport mechanisms are advection, dispersion and diffusion. Sorptive phenomena results in the retardation of contaminants. Further reductions in contaminant concentrations result from volatilization and microbial degradation (Ali, no date).

Advection is the process of physical transport of contaminants by the bulk movement of ground water. Dispersion refers to the mechanical spreading and mixing that occurs as ground water follows tortuous paths in randomly distributed sand and clay layers. Diffusion results from the movement of areas of high contaminant concentration to areas of less concentration by molecular forces. Sorption phenomena encompasses both adsorption and absorption processes. Adsorption is the adhesion of chemical molecules to particulate surface, while absorption connotes incorporating chemical molecules within the molecular structure of the subsurface materials.

The migration of volatile contaminants is proportional to the ground water velocity, modified by dispersion, diffusion, sorption, and volatilization effects. Dispersion and diffusion phenomena cause contaminants to spread, so that the margins of contaminant plumes are gradational rather than abrupt.

Sorption generally results in the retardation of contaminants in alluvial sediments. This may be due to clayey soils having a significant sorptive capacity for synthetic volatile organic compounds (VOCs). Concurrently, diffusion and refraction at interfaces between layers of high and low permeability are the main mechanisms of contaminant dissemination in lower permeability layers (Gilham and Cherry, 1982; Hubbert, 1940).

At the interface between the high and low permeablity layers, the processes of diffusion and refraction dominate contaminant migration. At macro- and micro-scales, the principal component of ground water and contaminant flow in sandy layers is largely horizontal. In clayey layers, contaminant migration is largely vertical, occurring mainly by diffusion and enhanced where refraction occurs.

In coarse-grained materials, contaminant dispersion by molecular diffusion is considerably less than dispersion by advection. In the lower-permeability materials, dispersion of contaminants within a complex flow system occurs primarily through molecular diffusion. The driving mechanism for molecular diffusion is the continually changing contaminant concentration contrasts between relatively rapid moving water in the sandy layers, and the lower velocity water in the clayey layers (Gilham and Cherry, 1982).

The extent to which a contaminant advances within the lower-permeability layers depends largely on the thickness of those layers, their permeability, contaminant concentration contrast and time. This implies that higher concentrations of contaminants should be found at the boundaries of the low-permeability layers and concentrations should decrease inward until the layer reaches equilibrium (Gilham and Cherry, 1982).

Refraction of ground water flowlines occurs at the interface of two formations of differing hydraulic conductivity. The angle of refraction is proportional to the contrast in hydraulic conductivity, i.e., the greater the contrast in hydraulic conductivity, the larger the angle of refraction (Freeze and Cherry, 1979).

In summary, flowlines prefer to use high-permeability formations as conduits, and try to traverse low-permeability formations by the shortest route. In aquifer-aquitard systems with permeability contrasts of two orders of magnitude or more, flowlines tend to become almost horizontal in aquifers and almost vertical in aquitards (Freeze and Cherry, 1979). This implies that most contamination would be introduced from the more permeable sediments above, and then flow almost directly downward in the lower-conductivity sediments.

The quantity and direction of refracted flow is directly proportional to the pressure head difference between the two media of contrasting hydraulic conductivity.

4.3.2 Surface Water Exposure Media

On-site surface water is limited to the runoff from the roof of the production/warehouse building and paved areas. The runoff is discharged to a drainage swale, located at the northeast corner of the site. Here the discharge water ponds and either evaporates or infiltrates into the soil. Surface water runoff is limited as the site is virtually flat non-landscaped and does not possess a coherent drainage pattern.

The nearest surface water body to the site is the Permanente Creek. Permanente Creek is approximately 600 feet to the northwest of the Jasco site and flows north-northwest towards the San Francisco Bay. It is concrete-lined and channelized for drainage control purposes. The sole use of Permanente Creek is for drainage and flood control. Surface water at the Jasco site does not drain into it.

4.3.3 Air and Soils Exposure Media

Contaminated soils are confined to the Jasco site and are not easily accessible to the public. The contaminated zone is not in the normal Jasco working area, therefore is undisturbed. Although there is an obvious lack of surficial soil sampling, analysis of soil samples taken indicate that the high concentrations of chemicals occur in the 3-10 feet depth interval. Soil survey data also indicate that contaminated soils are restricted to the Jasco site and that surface soils in the contaminated zone are some...at cemented and are not readily available for aeolian transport.

4.4 Potential Exposure Pathways

The Endangerment Assessment for the Jasco site has attempted to be as comprehensive as possible, resulting in the consideration of a variety of potential exposure pathways/scenarios. These scenarios are also descriptive of two distinct time frames: 1) the current site condition, and 2) potential future land-uses of the site property and surrounding areas. The following discussions describe these time frames and the exposure implications of these scenarios based on exposure media.

4.4.1 Current Land-Use

Exposure to indicator contaminants are not expected to occur under the current land-use of the Jasco site. This assumption is based primarily on the fact that Jasco will not be operating at the current location past 1992 and the inaccessibility to the contaminated areas. Exposure pathways associated with current land-use of the Jasco site are discussed below. A summary of the potential exposure pathways based on the following discussions for current site conditions are presented in Table 4-1.

Soils

The potential for exposure to contaminated soils by way of dermal absorption and/or incidental ingestion is assumed to be very low to non-existent. Contaminated soils are limited to the Jasco site in a confined area which is not easily accessible to the public and is not located in a normal work area. The potential receptors for the exposure medium are limited to Jasco employees and trespassers. Dermal absorption is insignificant due to the high volatility of the chemicals of concern. Ingestion of contaminated soils is highly unlikely since on-site activities, such as gardening, are not occurring under the current land-use conditions.

TABLE 4-1

POTENTIAL PATHWAYS OF EXPOSURE TO CONTAMINANTS ORIGINATING AT THE JASCO SITE UNDER CURRENT LAND-USE CONDITIONS

Exposure Medium	Potential Routes of Exposure	Potential Receptors	Pathway Completely	Potential for Substance Exposure
Soil	Dermal absorption, incidental ingestion.	Workers, trespassers.	No Contaminants are contained within 3-10 feet depth interval.	None
Air	Inhalation of VOCs and/or fugitive dust.	Workers, trespassers. Local population downwind of site.	No Contaminants are contained within 3-10 feet depth interval.	Very Low
Ground Water	Ingestion, inhalation, dermal absorption.	Local population. of Mt. View	No, public water supplemented with water from wells outside area of influence. No private wells are in use.	None

Air

Jasco employees and residents, located down wind and adjacent to the Jasco site may potentially be exposed to volatile organics and/or contaminated fugitive dusts. Inhalation exposure from the volatilization of organic chemicals in the soils and contaminated fugitive dust is assumed to be very low. As stated in the previous section, the high concentrations of chemicals occur in the 3-10 feet depth interval and are therefore not exposed to the surface. It is also noted that the surface soils in the contaminated zone are somewhat cemented and are not readily available for aeolian transport. Therefore if the soils are not disturbed the potential for volatilization and aeolian transport is very low. Since the contaminated soils are not located in a normal working area, it is assumed that the contaminated zone would remain undisturbed.

Ground Water

Potential contaminated exposure through ingestion inhalation, and/or dermal absorption of contaminants present in the ground water is non-existent. The reasons for this being the regulation of ground water use by the SCVWD and the results of the potential conduit investigation as discussed in the previous sections. Based on the available information it is unlikely that a significant public health risk would occur under the current land-use conditions.

- The A-B-aquifers are not used as a drinking water source.
- There are no water producing wells down gradient of the Jasco site, within the boundary of the potential conduit investigation.
- Regulation of the ground water use by the SCVWD.

4.4.2 Potential Future Land-Use

Potential future land-use of the Jasco site is dictated by the zoning change to residential, which went into effect in December 1983. Therefore the most likely exposure scenario involves future residential use for the Jasco site. A summary of potential exposure pathways is based on the following discussion for potential future land-use and are summarized in Table 4-2.

TABLE 4-2

POTENTIAL PATHWAYS OF EXPOSURE TO CONTAMINANTS ORIGINATING AT THE JASCO SITE UNDER POTENTIAL FUTURE LAND-USE CONDITIONS

Exposure Medium	Potential Routes of Exposure	Potential Receptors	Pathway Completely	Potential for Substance Exposure
Soil	Dermal absorption, incidental ingestion.	Construction workers and on-site residents.	Yes, if surface is disturbed	Moderate, periodic and short-term.
Air	Inhalation of VOCs.	Nearby residents Construction workers on-site residents.	Yes, if surface is disturbed.	Very low, high volatility and dispersion.
	Fugitive dust.	Construction workers on-site residents.	Yes If surface is disturbed.	Moderate, periodic and short-term
Ground Water	Ingestion, inhalation, dermal absorption.	Local population	Yes, if private well installed in area of plume.	High

Soils

Potential exposure to contaminants in soils via dermal absorption and incidental ingestion may occur as a result of on-site construction activities during the redevelopment stage of the Jasco property. This may include excavation type activities such as foundation, sewer, or utility line installation. This type of exposure is expected to be short-term with a low potential for repeated exposure.

Adult residents and children may become exposed to contaminants in soils as a result of gardening activities and playing. This would include both dermal absorption and incidental ingestion of contaminated soils. The contribution by dermal absorption is expected to be low due to the high volatility of the organic chemicals involved.

Air

Residents located downwind and adjacent to the Jasco site and construction workers may potentially be exposed to airborne volatile organic and/or contaminated fugitive dust. Potential exposure may occur as a result of on-site construction activities during the redevelopment of the property. On-site residents including children may become exposed to airborne volatile organic and contaminated fugitive dust as a result of gardening activities and playing. Exposure to airborne volatile organics is anticipated to be infrequent and of short duration with concentrations greatly reduced by ambient air during dispersion. Exposure resulting from contaminated fugitive dust generation is also considered to be periodic and of short duration. The potential for exposure is expected to be moderate.

Ground Water

Future land-use of the Jasco site may include the development and use of private supply wells completed within the contaminated A-aquifer. If these wells are utilized by the residents for drinking and showering, exposure to contaminants by way of ingestion of contaminated ground water and inhalation of volatile organic and dermal absorption may be significant

4.4.3 Conclusions

The following is a summary of the contents of this section.

1. Land-use in this Endangerment Assessment Study Area is predominantly residential, occupying approximately 90% of the land in the study area.

2. The residential population of the area is large and the current trend indicates that population growth is on the incline.

3. A and B,-aquifers, are not used for drinking water purposes in the vicinity of the Jasco site. The City of Mountain View operates several municipal wells in the general area of the site which draw water from the C-aquifer. Agricultural uses are practically non-existent in the City of Mountain View. Sampling data from off-site wells suggest that ground water transport of site contaminants to public wells has not occurred to date. If private supply wells are completed within the A-aquifer and utilized for drinking and showering, exposure may be high.

4. Surface water within the study area has no commercial or residential use and is not considered a potential migration pathway.

5. Contaminated soils are limited to the site. Under current site conditions volatilization of organic chemicals and aeolian transport of contaminated fugitive dust are highly unlikely due to the fact that contaminants are contained within the 3-10 feet depth interval and surface soils are somewhat cemented. If these soils are disturbed during future-use (development and gardening activities) significant exposure to airborne volatile organics is anticipated to be low due to concentrations being greatly reduced by ambient air during dispersion.

4.5 Exposure Point Concentrations

The degree, or magnitude, of exposure to a contaminant is primarily reliant upon the exposure point concentrations. It was determined through past monitoring data that the drainage swale is the on site area which is the most contaminated. For this reason, the drainage swale area was determined to be the primary exposure point from which exposure point concentrations have been determined.

The concentrations in this Endangerment Assessment were determined and expressed in terms of long-term exposure (average concentrations over time) and short-term exposure (high concentrations over time). Short-term exposure levels are the concentrations to which population may be exposed for short periods of time, usually 10 to 90 days. Long-term exposures are defined as the concentrations to which populations may be exposed over a long period of time, usually 70 years. This range of values was chosen to best illustrate the levels of exposures which can occur. Computerized models were used to estimate ground water contaminant distribution over a 70 year period. There were major uncertainties associated with estimating potential contaminant migration, through computerized models, from the Jasco site. Little hydraulic data was available for areas beyond the site and contaminant degradation and transport processes were not defined in accordance to field conditions.

Additional information on modeling efforts can be found in Appendix C. Summaries of exposure point concentrations are presented in Table 4-3 through Table 4-5.

4.5.1 Exposure Point Concentrations Determination Methodology

The following conventions were used to characterize the concentration levels of indicator contaminants at the exposure points. High values were reported in order to illustrate the range of data and to estimate the high exposure concentrations. In cases where the indicator contaminants were reported as not detected in the sampling reports or where concentrations were reported as less than the upper bound value, the exposure value was conservatively assumed to equal the upper bound value. When estimating values determined through numerical modeling, the data points with concentrations less than established water quality standards or criteria were not used in determining the average concentration. All average concentrations were derived by taking the arithmetic mean (average) of the projected data point concentrations (numerical modeling) or sampling data obtained from sampling reports.

Ground Water

Average values were obtained by taking the average of all projected data point concentrations over a 70 year period determined by numerical modeling. High values were developed by selecting the data points which projected the highest concentration levels over time.

Soils

Average values were obtained by taking the average concentration of samples collected over space and time. High values were determined by adding the value of two standard deviations to the average

TABLE 4-3

EXPOSURE POINT CONCENTRATIONS

(GROUND WATER)

Indicator Contaminant	Average Concentration(1) (mg/l)	High Concentration(2) (mg/l)
1,2-DCA	1.7×10^{-1}	1.6×10^{1}
1,1-DCE	5.5×10^{-2}	3.3×10^{0}
TCE	9.6×10^{-1}	1.2×10^{2}
Vinyl Chloride	3.1×10^{-3}	9.8×10^{-2}
Benzene	1.9×10^{-2}	7.3×10^{-1}
Tetrachloroethylene	5.8×10^{-2}	4.3×10^{0}
Methylene Chloride	6.8×10^{0}	8.7×10^{2}
1,1-DCA	2.0×10^{-1}	1.3×10^{1}
PCP	8.2×10^{-3}	3.1×10^{-1}

(1) Arithmetic mean of projected concentration levels over time determined through computerized modeling.

(2) Arithmetic mean of projected highest concentration points over time determined through computerized modeling.

TABLE 4-4

EXPOSURE POINT CONCENTRATIONS

(SOILS)

Indicator Contaminant	Average Concentration(1) (mg/kg)	High Concentration(2) (mg/kg)
1,2-DCA	1.0×10^{-1}	9.9×10^{-1}
1,1-DCE	2.2×10^{-1}	3.6×10^{0}
TCE	6.5×10^{0}	1.2×10^{2}
Vinyl Chloride	5.0×10^{-2}	5.0×10^{-2}
Benzene	9.8×10^{-2}	8.0×10^{-1}
Tetrachloroethylene	1.8×10^{0}	1.6×10^{1}
Methylene Chloride	4.8×10^{1}	8.0×10^{1}
1,1-DCA	1.2×10^{0}	1.5×10^{0}
PCP	1.0×10^{-1}	3.0×10^{-1}

(1) Average concentration equals the arithmetic mean of concentrations of samples collected over space and time.

(2) High concentration equals adding the value of two standard deviations to the arithmetic mean value.

values. These values provide a rough estimate of the upper 95% confidence interval for the average concentration that an individual could be exposed to over a number of exposure events.

Air

Concentrations of contaminants in air, due to volatilization of contaminants detected in ground water, were assumed to be the same as those projected for ground water (Andelman 1985). This assumption is based on 100% volatilization of the contaminant. Therefore, average and high values are the same as those developed for ground water.

4.6 COMPARISON TO OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs)

The section discusses "Applicable or Relevant and Appropriate Requirements" (ARARs) with respect to the Jasco site Endangerment Assessment. The purpose of this section is to compare actual and projected contaminant levels to ARARs. ARARs for indicator contaminants are used as a comparison to the exposure near and at the site. This comparison will indicate if there is an excessive exposure and potential risk to human health.

In the USEPA's July 1987 Interim Guidance on Compliance with ARARs, EPA defines applicable requirements as "those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitation pomulgated under Federal and State law that specifically addresses a hazardous substance pollutant, contaminant, remedial action location or other circumstance at a CERCLA site (Inside Washington Publishers 1987). EPA also specifies relevant and appropriate requirements as "those cleanup standards, standards of control, or other substantial environmental protection requirements, criteria, or limitations promulgated under Federal and State law that while not 'applicable' to a hazardous substance pollutant, or contaminant, remedial action, location or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and that their use is well suited to the particular site" (Inside Washington Publishers 1987). Potentially applicable requirements include Clean Air Acts National Ambient Air Quality Standards, and the Safe Water Acts Maximum Contaminant Level Goals (MCLGs).

At the Jasco site, exposure could occur through ground water, air and soil media. The following sections discuss ARARs and other criteria for each of these media and compare these standards or limitations against actual or projected contaminant levels for the indicator contaminant.

TABLE 4-5

EXPOSURE POINT CONCENTRATIONS

(AIR)(1)

Indicator Contaminant	Average Concentration(2) (mg/m3)	High Concentration(3) (mg/m3)
1,2-DCA	1.7×10^{-1}	1.6×10^{1}
1,1-DCE	5.5×10^{-2}	3.3×10^{0}
TCE	9.6×10^{-1}	1.2×10^{2}
Vinyl Chloride	3.1×10^{-3}	9.8×10^{-2}
Benzene	1.9×10^{-2}	7.3×10^{-1}
Tetrachloroethylene	5.8×10^{-2}	4.3×10^{0}
Methylene Chloride	6.8×10^{0}	8.7×10^{2}
1,1-DCA	2.0×10^{-1}	1.3×10^{1}
PCP	8.2×10^{-3}	3.1×10^{-1}

(1) Vaporization of ground water, assumes 100% vaporization.
(2) The average concentration equals arithmetic mean of projected concentration levels in ground water over time determined through computerized modeling.
(3) High concentrations equals arithmetic mean of projected highest concentration points in ground water over time determined through computerized modeling.

4.6.1 ARARs for Ground Water

The ARARs for current use of ground water in the vicinity of the Jasco site are standards and criteria established for drinking. Although there is currently no use of A-aquifer ground water for drinking in the vicinity of the Jasco site, the potential risk that would result if the ground water from this aquifer were ingested was evaluated using the MCLGs permissible in water which is delivered to 25 or more people, or 15 or more service connections. Other criteria that were used to assess the potential risk associated with the consumption of A-aquifer ground water include the proposed MCLs, MCLGs and the California State Action Levels Criteria which are designed to protect human health from chemical constituents in the drinking water. Table 4-6 summarizes the potential ARARs and other criteria established for drinking water.

The USEPA's Drinking water Health Advisories, in addition to MCL's and MCLG, also provide guidance for establishing drinking water quality standards. These advisories exist for 54 chemicals or chemical groups, seven of which are on the Jasco site indicator contaminant list (see Table 4-7). The exposure levels are established to migrate adverse health effects to the public. A safety factor has also been incorporated to protect sensitive population.

The definition for headings used for Table 4-7 follow:

- o One-day: Concentration calculation is based on 10-kg Child (one-year-old infant) consuming one liter of water per day.
- o Ten-day: Concentration calculation is based on a 10-kg child (one-year-old infant) consuming one liter of water per day.
- o Long Term: Concentrations are calculated for both 10-kg child concerning one liter of water per day and 70-kg adult consuming two liters of water per day.
- o Lifetime concentrations are calculated for a 70-kg adult consuming two liters of water per day.
- o Reference Concentrations for Potential Carcinogen. These concentrations indicate a risk of 10^{-6}.

4.6.2 ARARs for Air

The National Ambient Air Quality Standards (NAAQ) are the only regulations applicable to air contaminants at the Jasco site. The State of California provides no State specific ambient air quality criteria. It should be noted, however, that occupational exposure limits provided by the Occupational

TABLE 4-6
POTENTIAL ARARS AND OTHER CRITERIA
FOR CONTAMINANTS IN WATER

Indicator Contaminant	MCL(1) mg/l	MCLG(2) mg/l	CSAL(3) mg/l	Proposed MCL(1) mg/l	Proposed MCLG(2) mg/l
1,2 DCA	(4)	0	.001	.005	---
1,1 DCE	---	.007	.006	.007	---
TCE	---	0	.005	.005	---
Vinyl Chloride	---	0	.002	.001	---
Benzene	---	0	.0007	.005	---
Tetrachloroethylene	---	---	.004	---	0
Methylene Chloride	---	---	.040	---	---
1,1 DCA	---	---	.020	---	---
PCP	---	---	.0022	---	0.22

1. Maximum Contaminant Limits by the Federal Safe Drinking Water Act (USEPA 1986).
2. Maximum Contaminant Level Goal proposed by the USEPA (1986).
3. State Act Level, by the State of California, September 1987.
4. Not available.

TABLE 4-7

EPA DRINKING WATER HEALTH ADVISORS

Indicator Contaminant	One-Day ug/l Infant(3)	Ten-Day ug/l Infant(3)	Long-Term ug/l Infant(3)	Long-Term ug/l Adult	Life-Time ug/l Adult	Reference Concentration for Potential Carcinogens(2) ug/l Adult
.,2 DCA	740	740	740	2600	N/A	0.95
,1 DCE	1000	1000	1000	3500	---	0.24
'CE	---	---	---	---	---	2.8
/inyl Chloride	2600	2600	13	46	N/A	0.015
}enzene	233	233	N/A	N/A	N/A	0.35
'etrachloroethylene	---	34000	1940	6800	---	0.70
4ethylene Chloride	13300	1500	---	---	---	5.0
,1 DCA	---	---	---	---	---	---
CP	1000	300	300	1050	220	---

. Source: USEPA, 1985.

. Values indicate a risk of 10^{-6}

. 12 months.

'ote: See text explanation for heading.

TABLE 4-8

AIR STANDARDS (NON-ARARS)

Indicator Contaminant	PEL[(1)] mg/m^3	TLV-TWA[(2)] mg/m^3
1,2 DCA	---	40
1,1 DCE	---	20
TCE	270	270
Vinyl Chloride	---	10
Benzene	10	30
Tetrachlorethylene	170	335
Methylene Chloride	---	175
1,1 DCA	400	810
PCP	0.5	0.5

1. From: Occupational Safety and Health Adminstration, 1989.
2. From: American Conference of Governmental Industrial Hygienist, 1989.

Safety and Health Administration (OSHA) and the American Conferences of Governmental Industrial Hygienists (ACGIH) do exist. These exposure limits are calculated as Permissible Exposure Limits (PEL), as provided by OSHA or as Threshold Limit Value-Time Weighted Average (TLV-TWA) as provided by the ACGIH. Both values are exposure limits assuming an 8-hour work day with a 40-hour work week (see Table 4-8). These values are presented as possible reference levels only and do not imply ARAR status.

4.6.3 ARARs for Soils

There are no Federal standards for contaminant levels in soils. The State of California, Department of Health Services has established Hazardous Waste Threshold Limit concentrations for some organic constituents including TCE and vinyl chloride. The toxicity criteria for these compounds are based on acute fish toxicity. The limits are called Soluble Threshold Limit Concentrations (STLCs) and Total Threshold Limit Concentrations (TTLCs). STLC and TTLC values for TCE and vinyl chloride are shown in Table 4-9. These values are presented as possible reference levels only and do not imply ARAR status.

4.6.4 Results of Comparison

1,1 DCE exceeded or could be predicted to exceed the MCL standard in ground water (see Table 4-10). No potential ARARs were identified for the remaining seven indicator contaminants in ground water, soils or air. However, concentration levels of the seven indicator contaminants did exceed other criteria established by the State of California and the proposed MCL limits set by the USEPA.

TABLE 4-9

SOIL STANDARDS (NON-ARARS)[1]

Contaminant	Soluble Threshold Limit Concentrations (mg/l)	Total Threshold Limit Concentration (mg/kg)
TCE	204	2040
Vinyl Chloride	NA[2]	10

1. State of California, Department of Health Services, 1987.
2. Not available.

TABLE 4-10

EXPOSURE POINT CONCENTRATIONS VS POTENTIAL ARARS OR OTHER CRITERIA FOR CONTAMINANTS IN GROUND WATER

Indicator Contaminant	Potential ARARs (mg/l)	Other Critical(1) (mg/l)	Contaminant Concentration(2) (mg/l)	Standard Ratio
1,2 DCA	---	.001	0.17	170
1,1 DCE	.007	---	0.055	8
TCE	---	.005	0.96	192
Vinyl Chloride	---	.001	0.0031	3
Benzene	---	.0007	0.019	27
Tetrachloroethylene	---	.004	0.058	15
Methylene Chloride	---	.04	6.8	170
1,1 DCA	---	.02	0.2	10
PCP	---	.0022	0.0082	3.73

(1)Potential ARARs and other criteria listed in Table 4-6.
(2)Average concentrations.

SECTION 5.0
HUMAN INTAKE ASSESSMENT

5.1 Introduction

Since all indicator contaminant concentrations in ground water exceeded ARAR standards or other criteria limits, the risk characterization process was conducted for each exposure scenario. The concentration for the indicator contaminants at exposure points are used to calculate the exposure and intake levels for future land-use scenarios. The assessment of human intake is quantified in this section for those exposure events that were thought to be the most possible. These include the exposures that are likely to occur on a much more regular basis. The risk estimates for these most probable events were developed using a mathematical matrix that made provisions for a distribution of exposure and subsequent intake as a function of, for example, time activity and body weight.

This section describes the procedures used to determine human intake resulting from ingestion and inhalation exposure. Risks resulting from dermal intake are not calculated in this Endangerment Assessment because no methodologies are currently unavailable for inclusion with the intake estimates currently used.

The intake scenarios used in this section are representative of exposures assumed would occur on a repeating and regular basis. These include for example direct consumption of ground water at or in proximity of the Jasco site.

5.2 Intake Calculation Assumptions

Estimating human intake exposure point concentrations required the development of a methodology that represents the variability of exposure. For each separate scenario specific assumptions applicable only to them were developed. However, in many cases standard assumptions common to all exposures and consequently intakes were used. In particular, the standard weights of 70 kilograms (154 pounds) for adults and 17 kilograms (38 pounds) for children were used. These standard assumptions were applied for exposure to both ground water and soils. Although there are currently several reviews taking place by the USEPA and the scientific community on the issue of actual values for body weight, the values stated above were used in view of the traditional consensus presented in USEPA methodology (USEPA 1986).

Similarly although a range of values exist for total daily water consumption by adults and children, the traditional approach under SPHEM and Superfund Exposure Assessment Manual (SEAM) guidance documents is to use two liters (.53 gallons) per day for adults and one liter (.27 gallons) per day for children. Although these values are conservative as direct consumption values, and lower values are more reasonable, a narrow range around these values was assumed to be more suitable for conditions present at the Jasco site.

The definition of short-term (subchronic exposure) and long-term (chronic exposure), as they pertain to discussion in this document are 10 to 90 days and 70 years, respectively. Those assumptions are documented in SPHEM (USEPA 1986). For the purpose of this Endangerment Assessment the 90 day duration was selected as the short-term duration. Given the exposure scenarios selected, this time period was considered likely to provide a more accurate estimate of exposure to the identified indicator contaminants at the characterized exposure points discussed in Section 4.0. It should also be noted that intakes for children were only calculated for the short-term period, and not for the lifetime 70 year period, as the duration of childhood is limited.

The emphasis of the methodology presented below was to take into consideration as much of the potentially explored population as possible and identify those intakes that could potentially result in clinical manifestations of toxicological end points. In order to do so assumptions were chosen to be conservative enough to include the 90th percentile of the population within the Jasco study area, as it would be unreasonable to predict that all of the population would fit the assumptions all of the time. The following sections predict the intake calculation assumptions specific to the exposure media, with scenario specific discussion.

5.2.1 Water Ingestion

The ingestion of water at the hypothetical residences using private wells completed within the contaminated A-aquifer is described in this section. The assumptions used in calculating ground water ingestion, as the sole source of drinking water, would average two liters per day as a consumption rate, for adults, and one liter per day for children (USEPA 1986). In addition, it was assumed that as both a best estimate and a maximum plausible value, 100 percent of the water consumption by children occurs at home. Adults were assumed to consume 80 percent of their water at home as a best estimate, and 100 percent as a maximum plausible value. These assumption were made because adults are likely to consume water both at home and away from home. Children were conservatively assumed to consume 100 percent of their water at home.

Since the source of ground water for this scenario is residential, it was reasonable to assume that every day of a short-term, 90-day period and a long-term 70 year (25,550 days) period, represented a day of ground water ingestion for adults.

5.2.2 Soil Ingestion

This section describes the assumptions that were used to calculate soil ingestion for the future land-use scenarios in which outdoor activities involve adult construction workers, adult residents engaged in yard work activities and children playing in areas where contaminated soils can be contacted.

There are many studies reporting a wide variety of soil ingestion rates. In general the range values are from 25 to 100 mg per day, as best estimate, up to 100 to 500 mg per day (LaGoy 1987). These values are highly dependent on age and activity. For this Endangerment Assessment values within these ranges were used to represent a reasonable approach.

The USEPA (1988) report average soil ingestion values for 3.5 to 5 year old children as 0.05 grams (50 mg) per day and 0.2 grams (200 mg) per day for 1.5 to 3.5 year old children. These values were used as best estimate and maximum plausible values, respectively, for soil ingestion. The value of 0.5 grams (500 mg) of soil ingested per day for adults was used as a maximum plausible value, this was based on an estimate of outdoor activity involving yard work at eight hours per day (Hawley 1985). A value of 0.2 grams (200 mg) per day was used as the best estimate.

The time of exposure varies with the individual scenarios. Studies by Hill (1985) have shown that outdoor work can range between approximately 15 to 26 hours per week for men and women, therefore the resident that works the soil can be expected to work at least two days per week as a best estimate, and up to four days per week as a maximum plausible. These values were used in calculating time of exposure for soils to resident adults. It was assumed that children were exposed to soils for an equal number of days of outdoor activities. Short-term and long-term exposures for adults were assumed to be 90 days and 70 years, respectively.

During the redevelopment scenario, the potentially exposed persons are assumed to be construction workers who may encounter contaminated soils during redevelopment of the Jasco site and incidentally ingest 200mg (best estimate) to 500 mg (maximum plausible) of soil. Exposure time was conservatively assumed to be eight hours per day, five days per week for both best estimate and maximum plausible over a 90 day period of time. Longer exposures are not anticipated as excavation type activities for construction purposes are not prolonged.

5.2.3 Particulate Inhalation

The inhalation of airborne particulates was assumed to be limited to the future land-use scenarios where construction work is taking place, and/or tending and playing in a residential garden occurs. Air particulate concentrations were estimated based upon monitoring data collected at two residential construction sites in Arizona and Nevada (USEPA 1974). Although not site specific, this estimated value of 0.29 mg/m^3 was considered a conservative estimate of the air particulate concentrations that an individual may encounter at the Jasco site. Of this 0.29 mg/m^3 of particulate concentration, it was considered that 50 percent was respirable [particulate matter the size of 0.5 and 5.0 microns (Wedgman and Levy 1979)] as a best estimate, and 60 percent was respirable for a maximum plausible condition.

The inhalation rates of adults and children vary, depending on the level of activity. A moderate level of activity was assumed for construction workers and adults performing gardening activities. Therefore, adults were assumed to inhale at a rate of 2.6 m^3per hour as best estimate for the average adult (USEPA 1988), and 2.8 m^3 per hour as a maximum plausible. This value was calculated by the USEPA (1988) for an adult male. Children were assumed to undergo heavy activity while playing outdoors and were assumed to inhale at a rate of 2.4 m^3 per hour as best estimate, and 4.2 m^3 per hour as maximum plausible value (USEPA 1988).

The best estimate exposure duration for adults was assumed to be eight hours per day, two days per week. Maximum plausible exposures for adults were assumed to be eight hours per day for four days per week. Children were assumed to be outdoors for 1.5 hours per week (best estimate) and 2.0 hours per week (maximum plausible) (Timmer et. al. 1985). Inhalation of particulates was assumed to occur only half of the time over the 70 year period representing long-term exposure. This assumption accounts for periods of inactivity due to inclimate weather, illness, and any other reason that would preclude outdoor activities. As a conservative estimate it was assumed that short-term exposure to particulate contaminants occurs at every occurrence of outdoor activity. This assumption could be considered reasonable as the short-term 90 day exposure duration can represent the summer months when outdoor activities are frequent.

Both best estimate and maximum plausible exposure durations for construction workers were assumed to be eight hours per day, five days per week. Exposure is expected to be of only short-term duration (90 days), as construction activities are not for extended periods of time.

5.2.4 Inhalation of Vapors While Showering

This section describes the assumptions used to calculate inhalation of volatilized contaminants while showering. This is applicable to the future land-use scenario in which ground water is the source of residential potable water. For the purpose of this Endangerment Assessment showering activities were limited to adults.

As stated in Section 5.2.3 inhalation rates are dependent upon the level of activity of an individual. A light level of activity resulting in an inhalation rate of 1.3 m^3 per hour (USEPA 1988) was assumed for adults while showering. This rate was considered as both a best estimate and maximum plausible value since it was assumed that a light activity level is representative of showering for the entire exposed population.

Studies by Hill (1985) have shown that showering activities can range form 0.5 hours per week (five minutes per day), to 1.2 hours per week (10 minutes per day). These values were used for both best estimate and maximum plausible exposure durations. It was also assumed that showering occurs every day for both short-term and long-term periods.

As a conservative estimate it was calculated that 100 percent of the ground water contaminants are available for inhalation intake during the showering scenario.

5.2.5 Dermal Exposure to Soils

Dermal exposure was assumed to occur in the same intake scenarios as discussed in soil ingestion and particulate inhalation sections. Intakes and subsequent risks resulting from dermal intake were not calculated in this Endangerment Assessment, due to the lack of acceptable methodology for the determination of risks due to dermal exposures.

5.2.6 Dermal Exposure to Water

The dermal exposure to ground water was assumed to occur in the future land-use scenario when ground water is used for showering. Dermal intakes were not calculated for those reasons stated previously in Section 5.2.5.

5.2.7 Inhalation of Vapors, Outside of Residence

Inhalation of contaminants from the volatilization of volatile organic compounds in the soils was assumed to occur in the future land-use scenario in which outdoor activities involve the construction workers, adults, and children.

A highly conservative screening analysis was conducted to determine the potential health risk associated with inhalation exposure from the volatilization of the indicator contaminants in the soils. This analysis is presented in Appendix D and shows that the exposure to air emissions resulting from the volatilization of contaminants of the soils would not pose a significant health risk to the surrounding residents and worker population. The total upper-bound incremental lifetime risk at the point of maximum concentration was calculated to be 5.8×10^{-7} which is at the upper-bound limit of the carcinogenic risk range established by USEPA.

5.3 Intake Analysis

The calculation of intake (mg/kg/day) was completed for both subchronic (90 days) and chronic (70 years) scenarios. The receptor-specific intake rates are presented in Tables D-1 through D-9 in Appendix D. Each table presents the intake rate of a specific contaminant via a specific medium for adult residents, construction workers or children. The calculation of both best estimate and maximum plausible intake rates was completed using the set of parameters described in the preceeding sections. Comparison of these calculations show that the largest oral and inhalation intake value for contaminants is via ground water ingestion by adults and children.

SECTION 6.0
RISK CHARACTERIZATION

6.1 Introduction

This section describes the potential health risks associated with the exposure scenarios developed during the exposure assessment. To characterize the potential risks associated with the Jasco site, the exposure scenarios are integrated with the results of the toxicity assessment.

The potential risks associated with the indicator contaminants were quantified by using the short-term (subchronic) and long-term (chronic) daily contaminant intake. Intake amounts were then compared to published acceptable chronic and subchronic daily intake levels to assess potential non-carcinogenic health effects. Potential lifetime cancer risks were derived by using published carcinogenic potency factors.

In some cases the indicator contaminants exert carcinogenic effects that are of greater concern than the non-carcinogenic effects, or the carcinogenic effects are so severe that research has not substantially differentiated between the two effects when this is the case (e.g. 1,2-Dichloroethane, Benzene, Trichloroethane, and Vinyl Chloride) the Endangerment Assessment addressed the more significant carcinogenic effect. In other cases where research has been able to substantially characterize non-carcinogenic effects and carcinogenic effects for indicator contaminants (e.g. 1,1-Dichloroethene, Methylene Chloride, and Tetrachloroethylene) both non-carcinogenic and carcinogenic risks were calculated. By this rationale, the Endangerment Assessment characterizes non-carcinogenic and carcinogenic risks to the furthest and most practical level available based on the known scientific evidence as presented in the toxicological profiles.

6.2 Non-Carcinogenic Risk Assessment Methodology

For non-carcinogens, the U.S. EPA has calculated acceptable daily intakes for both short and long term. Since short-term (sub-chronic) exposure to relatively high concentrations of chemical contaminants can cause different toxic effects then those caused by long-term (chronic) exposure to lower concentrations, two intake levels are calculated for each chemical, the sub-chronic acceptable intake (AIS) and the chronic acceptable intake (AIC). The acceptable daily intakes are specific to exposure routes, oral and inhalation, and are expressed in mg/kg/day. Acceptable daily intake levels for indicator contaminants used in this assessment were determined by using the USEPA Integrated

Risk Information System (IRIS) (USEPA 1989), and through the aid of Region IX EPA (USEPA 1989a). A summary of oral and inhalation AISs and AICs are listed in Table 6-1.

Once the acceptable reference intake was determined, the hazard indices (HI) were determined by dividing the appropriate calculated intake levels by the appropriate acceptable intake reference level. This comparison results in a ratio of **estimated intake:acceptable intake**. Any chemical with an intake level greater than the acceptable intake levels will cause the HI to exceed unity. When an HI exceeds unity there may be a concern for potential health risks (USEPA 1986). These health risks are discussed in the detailed chemical-specific Toxicological Profiles presented in appendix B. Total hazard indices are based upon the comprehensive levels that may be incurred by an individual. Total hazard indices are calculated by adding the chemical-specific hazard indices together.

6.3 Carcinogenic Risk Assessment Methodology

Carcinogenic Risks were calculated for indicator contaminants that have been identified as being potnetial human carcinogens. This identification process has been performed by the USEPA and is based on current toxicological/epidemiological evidence.

Carcinogenic risk calculations were performed by using individual long-term intake levels of indicator contaminants for both best estimate and maximum plausible, and multiplying them by the appropriate chemical-specific carcinogenic potency factor (CPFs) presented in Table 6-2. The CPF anticipates the probability of occurrence of a lethal cancer within a lifetime and is expressed in units of $(mg/kg_{bodyweight}/day)^{-1}$. This factor is an upper 95 percent confidence limit on probability of response per unit intake of a chemical over a lifetime. Therefore there is only a five percent chance that the probability of a response could be greater than the estimated value on the basis of experimental data used. If the exposure assessment is conservative, the predicted risk is an upper bound estimate. Consequently, the predicted risk may overestimate the actual risk at a site. However, this method is used so that the carcinogenic risk will be underestimated (USEPA 1986).

The resulting product of the CPF x intake is a numerical expression that estimates the excess cancer mortality rate to a population due to intake of a carcinogenic contaminant over a 70 year period. For example, the expression 1×10^{-6} illustrates a potential excess cancer rate to a population to be one in a million attributed to the chemical in question over a 70 year period. The USEPA recognizes an allowable range of carcinogenic risk of 10^{-4} to 10^{-7} after remediation (USEPA 1986).

TABLE 6-1
ACCEPTABLE DAILY INTAKE FOR
INDICATOR CONTAMINANTS
(NON-CARCINOGENIC EFFECTS)

	Oral		Inhalation	
Indicator Contaminant	**AIS(1) mg/kg/day**	**AIC(2) mg/kg/day**	**AIS(1) mg/kg/day**	**AIC(2) mg/kg/day**
1,2 DCA	---	---	---	---
1,1 DCE	9.00×10^{-3}	9.00×10^{-3}	---	---
TCE	---	---	---	---
Vinyl Chloride	---	---	---	---
Benzene	---	---	---	---
Tetrachloroethylene	1.0×10^{-2}	1.0×10^{-2}	---	---
Methylene Chloride	6.0×10^{-2}	6.0×10^{-2}	9.0×10^{-1}	9.0×10^{-1}
1,1 DCA	1.0	1.0×10^{-1}	1.0	1.0×10^{-1}
PCP	3.0×10^{-2}	3.0×10^{-2}	---	---

(1) Acceptable subchronic daily intake.
(2) Acceptable chronic daily intake.

TABLE 6-2
CARCINOGENIC POTENCY FACTORS FOR INDICATOR CONTAMINANTS (CARCINOGENS)

Indicator Contaminant	Oral Potency Factor mg/kg/day^{-1}	Inhalation Potency Factor mg/kg/day^{-1}	Source
1,2 DCA	9.1×10^{-2}	9.10×10^{-2}	USEPA 1989
1,1 DCE	6.0×10^{-1}	1.20	USEPA 1989
TCE	1.1×10^{-2}	1.30×10^{-2}	USEPA 1989a
Vinyl Chloride	2.30	2.95×10^{-1}	USEPA 1989a
Benzene	2.9×10^{-2}	2.90×10^{-2}	USEPA 1989
Tetrachloroethylene	5.1×10^{-2}	3.30×10^{-3}	USEPA 1989a
Methylene Chloride	7.5×10^{-3}	1.40×10^{-2}	USEPA 1989
1,1 DCA	9.1×10^{-2}	---	USEPA 1989a
PCP	1.6×10^{-2}	---	USEPA 1989a

6.4 Risk Analysis

This section evaluates the risk to human health that is posed by the Jasco site. Scientific judgement was used to select best estimate values that probably represent actual intakes at and near the Jasco site and maximum plausible intakes that are based on intake estimates that may occur, but are not necessarily representative of conditions associated with the site. As previously stated complete exposure pathways under current land-use conditions do not exist. Therefore health risks associated with current land-use scenario were not calculated. Potential health risks associated with the projected future land-use scenario (residential occupancy) were calculated and are discussed in the following sections.

6.4.1 Ground Water

The possibility that a small domestic well would be drilled into the A-aquifer for a water supply is very small. The ground water is regulated by the Santa Clara Valley Water District with a fee for ground water withdrawal and neither the A or B-aquifer are currently used for domestic purposes in the vicinity of the Jasco site. A summary of results shown on Table E-1 demonstrates that the chronic hazard indices associated with ground water ingestion by adult residents exceeds unity ($HI_{Best\ Estimate}$ = 3.2 and $HI_{Maximum\ Plausible}$ = 3.7). Further analysis of the chemical specific hazard indices reveals that methylene chloride ($HI_{Best\ Estimate}$ = 3.0 and $HI_{Maximum\ Plausible}$ = 3.3) is the main contaminant responsible for the high hazard indice calculated for ground water ingestion by adult residents. Subchronic hazard indices for ground water ingestion by adults (see Table E-2) and children (see Table E-3) are less than one and no adverse effects would be expected to occur.

Chronic and subchronic hazard indices associated with inhalation of vapors while showering by adults are presented in Tables E-4 and E-5. Calculations indicate chronic hazard indices are less than one for both best estimate and maximum plausible values. Subchronic hazard indices were found to be 1.2 (best estimate) and 3.0 (maximum plausible). These excessive hazard indices are due to estimated methylene chloride intakes.

Potential excess cancer risks associated with consuming ground water containing carcinogenic indicator contaminants are shown on Table E-6. Calculations indicate a range from 3.4×10^{-6} for pentachlorophenol (PCP) to 1.4×10^{-3} for methylene chloride as best estimate, and 3.8 X 10-6 for

PCP and 1.5×10^{-3} for methylene chloride for maximum plausible values. Cumulative carcinogenic risks associated with ground water ingestion are 3.6×10^{-3} for Best Estimate and 4.0×10^{-3} Maximum Plausible values. Calculation of lifetime cancer risks associated with inhalation of vapor by adults while showering are presented in Table E-7 and show potential excess cancer risk of 2.7×10^{-4} for best estimate and 5.9×10^{-4} maximum plausible values. Methylene chloride presents the highest potential cancer risk for both best estimate and maximum plausible values with potential risks of 1.0×10^{-4} and 2.9×10^{-4} respectively.

6.4.2 Soils

Potential exposure to contaminated soils via incidental ingestion and fugitive dust inhalation by construction workers may occur as a result of on-site construction activities during redevelopment of the Jasco property. On-site residents including children may also become exposed to contaminated soils during gardening activities and playing. The likelihood of the above scenarios being carried out is highly probable since the area surrounding the site is residential and the site property was rezoned residential in 1983 and Jasco is required to vacate the premises by 1992.

Chronic and subchronic hazard indices for contaminated soil ingestion by on-site adult residents are presented in Tables E-8, and E-9. Subchronic hazard indices for children and construction workers are shown in Table E-10 and E-11, respectively. Calculations demonstrate that cumulative hazard indices for all receptors are much less than unity and therefore toxic effects are assumed to be negligible. Cumulative potential excess cancer risks presented by ingestion of contaminated soils by adults are shown on Table E-12 and indicate potential excess cancer risks of 7.3×10^{-7} and 3.7×10^{-6} for best estimate and maximum plausible values, respectively.

Hazard indices for chronic and subchronic fugitive dust inhalation by on-site residents are presented in Tables E-13 and E-14. Subchronic hazard indices associated with fugitive inhalation by children and construction workers are shown in Table E-15 and E-16, respectively. Results indicate that all hazard indices values are substantially less than unity for all receptors and therefore potential non-carcinogenic health risks associated with exposure to contaminated fugitive dust Therefore no adverse health effect would be expected. Cumulative potential cancer risks associated with inhalation of contaminated fugitive dust by adults are presented in Table E-17 and show potential cancer risk of 6.5×10^{-9} for best estimate and 1.7×10^{-8} for maximum plausible values.

6.4.3 Conclusion

Chronic and subchronic hazard indices were calculated for total daily ingestion of indicator contaminants via ingestion of ground water combined with incidental ingestion of contaminated soils by adults (see Table E-18). Chronic hazard indices for total daily ingestion exceed unity with 3.4 for best estimate and 3.7 for maximum plausible values. Comparison to hazard indices calculated for ground water ingestion (Table E-1) and soil ingestion, (Table E-8) shows that ground water ingestion in particular the ingestion of the contaminant methylene chloride, poses the adverse health effects associated with chronic ingestion of indicator contaminants. Subchronic hazard indices for total daily ingestion of indicator contaminants are less than one for both best estimate and maximum plausible values. Therefore no adverse health effects would be expected.

Chronic and subchronic hazard indices for total daily inhalation of indicator contaminants by way of inhalation of vapors while showering combined with inhalation of contaminated fugitive dust by adults are shown on Table E-19. Calculations indicate hazard indices of less than one for both chronic and subchronic intake values and therefore adverse health effects would be assumed to be negligible.

Table E-20 presents a summary of subchronic hazard indices calculated for total daily ingestion (ingestion of both ground water and contaminated soils) and total daily inhalation (inhalation of contaminated fugitive dust) of indicator contaminants by children. Results indicate that through ingestion hazard indices are substantially greater than one for both best estimate and maximum plausible values. These excessive hazard indices result form the consumption of contaminated ground water by a 17 kg child. Contaminant specific analysis indicates that the intake of methylene chloride under the best estimate assumptions is 6.7. All other best estimate hazard indices are below unity. For the maximum plausible intake assumptions, 1,1-DCE, tetrachloroethylene, and methylene chloride, all have hazard indices substantially excessive of unity (21, 25, and 850 respectively).

Subchronic hazard indices for total daily ingestion (ingestion of contaminated soils) and total daily inhalation (inhalation of fugitive dust) by construction workers are summarized in Table E-21. Calculations indicate hazard indices of considerably less than one for both exposure pathways. Therefore no adverse health effects would be expected from exposure to either pathway.

Table E-22 includes a summary of the potential lifetime cancer risks associated with total daily ingestion. Total daily ingestion includes ground water ingestion combined with soil ingestion. Results show potential lifetime cancer risks of 3.7×10^{-3} for best estimate and 4.1×10^{-3} for maximum plausible values. When potential lifetime cancer risks for total daily ingestion are compared to potential cancer risks calculated for ground water ingestion (Table E-16) and soil ingestion (Table E-12) it is evident that ingestion of ground water poses the greatest potential lifetime cancer risks.

Potential lifetime cancer risks associated with total daily inhalation of indicator contaminants are also included on Table E-22. Total daily inhalation includes inhalation of vapors while showering combined with inhalation of fugitive dust. Calculations indicate potential lifetime cancer risks of $2.5 X 10^{-4}$ for best estimate $6.4 X 10^{-4}$ for maximum plausible values. Comparison between the calculated potential lifetime cancer risks associated with total daily inhalation of indicator contaminants to individual potential cancer risks calculated for inhalation of vapors (Table E-7) and inhalation of fugitive dust (Table E-17) shows that the potential cancer risk associated with inhalation of fugitive dust is minimal as compared to inhalation of vapors while showering.

SECTION 7.0
CONCLUSIONS

This section presents the conclusions of the Endangerment Assessment which are listed below. It was determined that the only complete exposure pathway associated with current land-use of the Jasco site was employee and trespasser exposure via inhalation of volatilized contaminants originating in the soils. A screening analysis, using a worse-case scenario indicates a potential carcinogenic risk of 5.8×10^{-7} which is within the USEPA allowable carcinogenic risk range of 10^{-4} to 10^{-7} after remediation.

Separate estimates of the potential for carcinogenic risk and non-carcinogenic risk were calculated for each exposure scenario associated with potential future land-use (residential occupancy) of the site. Risk calculations were made for representative concentrations (best estimate) of the contaminants and for the highest measured contaminant concentrations (maximum plausible). As a result each scenario is associated with four risk calculations: best estimate - carcinogenic; maximum plausible - carcinogenic; best estimate - non-carcinogenic; maximum plausible - non-carcinogenic. The findings were as follows.

1) Significant carcinogenic risks were calculated for both best estimate and maximum plausible values associated with ground water (A-aquifer) consumption and inhalation of ground water vapors.

2) Significant non-carcinogenic risks were calculated for ground water ingestion using best estimate and maximum plausible contaminant concentration levels.

3) There is no significant carcinogenic risk or non-carcinogenic risk associated with exposure to on-site contaminated soils via incidental ingestion or fugitive dust inhalation.

The risk characterization step focused upon human health effects and risks due to the chemical properties of each of the indicator contaminants considered. The results of the risk characterization process were expressed in hazard indices for non-carcinogenic effects and risk levels for carcinogenic effects. For this assessment a hazard index exceeding unity and a risk level exceeding 1×10^{-6} was considered to pose a potential health threat.

Best estimate and maximum plausible hazard indices indicate that chronic and subchronic health effects are not expected as a result to exposure to media containing indicator contaminants for inhalation and ingestion pathways except for chronic daily ingestion of ground water.

The carcinogenic risks were estimated by considering those contaminants for which carcinogenic potency factors have been developed. Under these conditions best estimate carcinogenic risks of greater than 1 X 10^{-6} were calculated for ground water ingestion (3.6 X 10^{-3}) and ground water vapor inhalation (2.7 X 10^{-4}) scenarios.

For ground water ingestion and inhalation pathways it is important to point out that the non-carcinogenic risk and carcinogenic risk are largely dependent upon the concentration of methylene chloride in the water.

The uncertainties associated with the risks at the Jasco site relate to the procedures and inputs used in the assessment. Uncertainties can result from the use of conservative assumptions which is often the case in exposure assessments where data is lacking. Assumptions made in the process of developing the Endangerment Assessment are noted within the report and have resulted in areas of uncertainty. The identified uncertainties are as follows.

1) The results generated by the ground water modeling are based on limited field data without adequate field data describing the subsurface system models cannot predict exposure point concentrations with complete accuracy. In light of these difficulties assumptions were made to evaluate contaminant migration and exposure point concentrations. The application of these assumptions resulted in conservative estimates of exposure point concentrations and subsequent risk estimates.

2) The use of the highest recorded contaminant data as exposure point concentrations is another area of uncertainty. It is unlikely that high value data realistically represents the concentration that will be encountered by the public.

3) The potential difference between detection limit values used in the assessment and the actual contaminant data is another source of uncertainty that effects the conclusion that a significant risk exist.

4) Additional conservativeness is associated with the derivation of critical toxicity values from a limited number of study results (i.e. data extrapolated from animal studies to predict potential health effects of a chemical in human).

SECTION 8.0
REFERENCES

ACGIH (American Conference of Governmental Industrial Hygienists). 1987. TLVs. Threshold Limit Values and Biological Exposure Indices for 1981-1988.

ATSDR (Agency for Toxic Substances and Disease Registry), U.S. Public Health Service, 1988b. Toxicologic Profile for Trichlorethylene. pp 140.

ATSDR, U.S. Public Health Service. 1988a. Toxicological Profile for Tetrachloroethylene. pp 112.

ATSDR, U.S. Public Health Service. 1987. Toxicological Profile for Benzene. pp 182.

ATSDR, U.S. Public Health Service. 1988c. Toxicological Profile for Vinyl Chloride. pp 114.

Aksoy, M., Erdem, S., Erdogan, G., Dincol, G. 1976. Combination of Genetic Factors and Chronic Exposure to Benzene in the Aetiology of Leukemia. Human Heredity. 25, 149 - 153.

Ali, S.M., no date, Fate of trichlorethylene and other pollutants is soil and water, Consultant's report for California Regional Water Quality Control Board - Central Valley Region, Sacramento, California, 50 pp.

Andilman, J.B. 1985. *Inhalation Exposure in the Home to Volatile Organic Contaminants of Drinking Water.* The Science of the Total Environment, 47, pp. 433-460.

Begley, J. 1977. Association between renal function tests and phenochlorophenol exposure. Clinical Toxicology. 11:97-106.

Bionetic Research Laboratories (BRL). 1968. Evaluation of carcinogenic, teratogenic, and mutagenic activities of selected pesticides and industrial chemicals, Volume I, Carcinogenic Study. Report to National Cancer Institute, Bethesda, Maryland.

Buben, J.A., O'Flaherty, E.J., 1985. Delineation of the Role of Metabolism in the Hepatotoxicity of Trichloroethylene and Perchloroethylene: A Dose-Effect Study. Toxicology and Applied Pharmacology. 78,1, 105-122. (cited in ATSDR, 1988b).

Feron, V.J., Speck, A.J., Williams, M.I., Van Buttaum, D., Groct, A.P., 1975. Observations on the Oral Administration and Toxicity of Vinyl Chloride in Rats. Food and Cosmetic Toxicology. 13,6, 633-638. (cited in ATSDR, 1988c).

Fingerhut M.A., W.E. Halperin, P.A. Honcha, et al. 1984. An evaluation of dioxin exposure and soft tissue sarcoma pathology among chemical workers in the United States. Scand J Work Environ. Health 10:299-303.

Foster, S.A. and Chrostowski, P.C. 1987. Inhalation exposures to volatile organic contaminants in the shower. Presented at the 80th Annual Meeting of the Air Pollution Control Association, New York, N.Y., June 21-26, 1987.

Freeze, R.A., and J.A. Cherry, 1979, Groundwater, Prentice-Hall, Inc., Englewood Cliffs, N.J.

Gilbert F.I., G.E. Minn, et al. 1981. Effects of chemical preservatives on the health of wood treating workers in Hawaii, 1981. Clinical and chemical profiles and historical perspective study (unpublished). McLean VA: American Wood Preservers Institute.

Gilham and Cherry, 1982, Contaminant migration in saturated unconsolidated geologic deposits, Recent Trends in Hydrogeology, N.N. Narasimham, ed., Geological Society of America, Special Paper, 189, pp. 31-62.

Goldstein, J.A., M. Friesen, R.E. Linder, P. Hickman, J.R. Hass and H. Bergman. 1977. Effects of pentachlorophenol on hepatic drug-metabolizing enzymes and porphyira related to contamination with chlorinated debenzo-p-dioxins and dibenzoferans. Biochem. Pharmacol. 26:1549-1557.

Greene M.H., L.A. Brinton, J.F. Fraumeni J.F. et al. 1978 Familial and sporadic Hodgkin's disease associated with occupational wood exposure. Lancit. 2:626-627.

Harding Lawson Associates. 1987. Remedial Investigation/Feasibility Study, Middlefield-Ellis-Whisman Study Area, Mountain View, California. Report submitted to U.S. EPA Region IX on behalf of Fairchild Semiconductor Corporation, Intel Corporation, and Raytheon Company, Volume one. July 1987.

Hawley, J.K., 1988. Assessment of health Risks from Exposure to Contaminated Soils. *Risk Analysis* 5:289.

Healy, T.E., Poole, T.R., Hooper, A. 1982. Rat Fetal Development and Maternal Exposure to Trichloroethylene at 100 ppm. British Journal of Anaesthesiology, 54, 337 - 341. (cited in ATSDR, 1988b).

Helley, E.J., Lajoie, K.R., Spangle, W.E., and Blair, M.L. 1979. "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning", Geological Survey Professional Paper 943, U.S. Government Printing Office 1979.

Hill, M.S., 1985. Patterns of time use. In F.T. Juster and F.P. Stafford (eds) *Times, Goods, and Well-being.* Survey Research Center. Institute of Social Records. University of Michigan, Ann Arbor. pp. 133-166.

ICF - Clement 1988. Final Draft Endangerment Assessment for the Middlefield-Ellis-Whisman Site in Mountain View, California. July 1, 1988. Report submitted to EPA Region IX for Camp Dresser and McKee Inc.

Inside Washington Publishers, 1987. *SARA NCP Refines Controversial "ARAR" Cleanup Standards*. In Inside EPA, November 27, 1987. p. 14.

Johnson, R.L., P.J. Gerhing, R.J. Kociba and B.A. Schwetz. 1973. Clorinated debenzodioxions and pentachlorophenol. Environ Health Perspect., Exp. Issue No. 5, Sept., p. 171-175.

Kerkvliet, N.I., L. Baecher-Steppan, A.T. Claycomb, A.M. Craig and G.G. Sheggeby. 1982. Immunotoxicity of technical pentachlorophenol (PCP-T): Depressed humoral immune responses to T-dependent and T-independent antigen stimulation in PCP-exposed mice. Tundam. Appl. Toxicology. 2(2):90-99.

Kjellstrand, P., Holmquist, B., Alm, P., Kanje, M., Romane, S., Jonsson, J.B., Mannson, L., Bjerkamo, M. 1983. Trichloroethylene: Further Studies of the Effects on Body and Organ Weights and Plasma Butyryl Cholinesterase Activity in Mice. Acta Pharmacol. Toxicol; 53, 375 - 384. (cited in ATSDR, 1988b).

Klemmer, H.W. 1972. Herman Health and Pesticides; Community Pesticide Studies. Residue Review. 41:55-63

Klemmer, H.W. et al.. 1980. Clinical fingings in workers exposed to pentachlorophenol. Arch Environ. Contam. Toxicology. 9(6):715-725.

LaGoy, P.K. 1987. *Estimated Soil Ingestion Rates for Use in Risk Assessment.* Risk Analysis. 7(3):355-359.

Larsen, R.V., G.S. Born, W.V. Kessler, S.M. Shaw and D.C. Van Sickle. 1975. Placental transfer and teratology of pentachlorophenol in rats. Environmental Lett. 10:121-128.

Li, G.L., Yin, N., Watanabe, T. 1986. Benzene-Specific Increase in Leukocyte Alkaline Phosphatase Activity in Rats Exposed to Vapors of Various Organic Solvents. Journal of Toxicology and Environmental Health 19.581-989.

Maltoni, C., Lejemine, G., Colti, G. 1986. Experimental Research on Trichloroethylene Carcinogenesis. Archiv. Res. Industrial Carcinogenesis Series. Maltoni, C., Mehlaman, M.A., eds., Vol. V., Princeton Scientific Publishing Co., Inc., Princeton, N.J., pp 393 (cited in ATSDR, 1988b).

Maltoni, C., Cotti, G., Morisi, L., Chieco. P. 1980. Toxicity and Carcinogenicity Report of Institute of Oncology and Tumor Center. Bologna, Italy. (cited in U.S. EPA, 1984d).

McKenna, M.J., Quast, Yahel, H.O., Balmer, M.F., and Rampy, L.W. 1982. Vinylidene Chloride: A Chronic Inhalation Toxicity and Oncogenicity Study in Rats. Toxicology Research Lab., Health and Environmental Sciences, Dow Chemical USA, Midland, MI. (cited in U.S. EPA, 1984d).

Merck Index, Tenth Edition. 1983. Merck and Company Inc., Rahway, N.J.

Murray, F., Nitschke, K., Rampy, L.,Schwetz, B. 1979. Embryotoxicity and Fetotoxicity of Inhaled or Ingested Vinylidene Chloride in Rats and Rabbits. Toxicology and Applied Pharmacology. 48, 189 - 202. (cited in U.S. EPA, 1984d).

NCI (National Cancer Institute). 1977. Bioassay of Tetrachloroethylene for Possible Carcinogenicity. Bathesda, MD: U.S. Department of Health Education and Welfare, Public Health Service, National Institute of Health. DHEW Pub. No. (NIH) 77-813. (cited in ATSDR, 1988a).

NCI (National Cancer Institute). 1978. Bioassay of 1,2-Dichloroethane for Possible Carcinogenicity. NCI Carcinogenesis Technical Report Series No. 55, DHEW Pub. No. (NIH) 78-1361. Government Printing Office, Washington, D.C. (cited in U.S. EPA, 1984c).

NTP (National Toxicology Program). 1986. Toxicology and Carcinogenesis of Tetrachloroethylene (CAS No. 127-18-4) in F344/N rats and B6C3F1 Mice. (Inhalation Studies). National Toxicology Program Tech. Rep. Ser. Issue. 311. (cited in ATSDR, 1988a).

NTP (National Cancer Institute/National Toxicology Program). 1982. NTP Technical Report on the Carcinogenesis Bioassay of Vinylidene Chloride in F344/N Rats and B6C3F1/Mice (Gavage Study). NTP No. 80-82. NIH Publ. No. 82-1784. NTP, Research Triangle Park, NC and Bathesda, MD. U.S. DHHS, PHS, National Institute of Health. (cited in U.S. EPA, 1984d).

NTP (National Toxicology Program) Technical Report on the Toxicology and Carcinogenesis Studies of Pentachlorophenol (CAS No. 87-5) in B6C3FI Mice. NTP TR349. Publication No. 86-2804.

Narasimhan, N.N., 1982, Physics of saturated-unsaturated subsurface flow, Recent Trends in Hydrogeology, N.N. Narasimhan, ed., Geological Society of America, Special Paper, 189, pp. 3-24.

Oh, N.G., Story, L.K., Holder, B.B., Bronson, J.M., Williams, P.R., 1983. Health Evaluation of Employees Occupationally Exposed to Methylene Chloride. Mortality. Scand. J. Work Environ. Health. 9,1, 8-16. (cited in U.S. EPA, 1984f).

Olson, J. 1989. EPA Environmental Criteria and Assessment Office, Cincinnati, Ohio. Personal Communication, February 21, 1989.

Questa Engineering Corporation, Preliminary Ground Water Investigation, June 1984.

Questa Engineering Corporation, Jasco Monitoring Well V-2, October 20, 1986.

Questa Engineering Corporation, Installation of Well V-3, Permeability Studies, Soil and Ground Water Sampling and Analysis, December 5, 1986.

Roberts, H.G. 1983. Aplastic anemia and cell aplasia due to pentachlorophenol. South Med J. 76:45-48.

Robinson C., D. Fowler, D. Brown, et al. 1985. Plywood mill workers' mortality, 1945-1977. Standford Research Institute, Menlo Park, CA.

Sandmeyer, E.E. 1981. Aromatic Hydrocarbons. In: Patty's Industrial Hygiene and Toxicology. Vol. 2. 3rd Rev. ed., Clayton. G.D., Clayton, F.E., eds. New York: Interscience Publishers. pp. 3253 - 3283.

Schwetz, B.A., J.F. Quast, P.A. Keeler, C.G. Humiston and R.J. Kociba. 1978. Results of two-year toxicity and reporductive studies on pentachlorophenol in rats. In: Pentachlorophenol, Chemistry, Pharmacology and Environmental Toxicology, R.R. Ras, Ed. Plenum Press. New York p. 301.

Schwetz, B.A., Leong, B.K.J., Gehring, P.J. 1974. Embryo- and Fetotoxicity of Inhaled Carbon Tetrachloride, 1,1-Dichloroethane, and Methyl Ethyl Ketone in Rats. Toxicol. Appl. Pharmocology 20, 452-464. (cited in U.S. EPA, 1984b).

Spencer, H.C., Rowe, V.K., Adams, E.M., McCollister, D.D., Irish, D.D. 1951. Vapor Toxicity of Ethylene Dichloride Determined by Experiments on Laboratory Animals. Industrial Hygiene and Occupational Medicine. 4, 482-499. (cited in U.S. EPA, 1984c).

Timmer, S.G.; Eccles, J.; O'Brien, K.; 1985. How Children Use Time. In F.G. Juster and F.P. Stafford (eds). *Time, Goods and Well-Being*. Survey Research Center Institute for Social Research, University of Michigan, Ann Arbor. pp. 353-380.

Tucker, A.N., Sanders, V.M., Barnes, D.W., 1982. Toxicology of Trichloroethylene in the Mouse. Toxicology and Applied Pharmacology. 62, 351 - 357. (cited in ATSDR, 1988).

USEPA. 1983. Reportable Quantity for Dichloromethane. Prepared by the Environmental Criteria and Assessment Office, Cincinnati, OH, for the Office of Solid Waste and Emergency Response, Washington, D.C. (cited in U.S. EPA, 1984f).

USEPA. 1984b. Health Effects Assessment of 1,1-Dichloroethane. pp 25.

USEPA. 1984c. Health Effects Assessment for 1,2-Dichloroethane. pp 44.

USEPA. 1984d. Health Effects Assessment for 1,1-Dichloroethylene. pp 33.

USEPA. 1984e. Health Effects Assessments of Methylene Chloride. pp 48.

USEPA. 1984f. Health Effects Assessments of Pentachlorophenol. pp 1.

USEPA. 1986. Superfund Public Health Evaluation Manual. Washington, D.C. 20460. OSWER Directive 9285.4-1.

USEPA. 1986a. Guidelines for the Health Risk Assessment of Chemical Mixtures. Fed. Reg. 51:34013-34023.

USEPA. 1987b. National primary drinking water regulations - synthetic organic chemicals; monitoring for unregulated contaminants; final rule. Fed. Reg. 52:25690-25717 (July 8, 1987).

USEPA. 1988. *Superfund Exposure Assessment Manual.* OSWER Directive 9285.5-1

Vogel, T.M. and McCarty, P.L. 1985. Biotransformation of tetrachloroethylene to trichloroethylene, dichloroethylene, vinyl chloride, and carbon dioxide under methanogenic conditions. Applied Environmental Microbiology. 49:1080-1083.

Ward, C.O., Kuna, R.A., Snyder, N.K., Alsaker. R.D., Coate,W.B., Craig, P.H. 1985. Subchronic Inhalation Toxicity of Benzene in Rats and Mice. American Journal of Industrial Medicine. 7, 457 - 473.

Wahler Associates, Preliminary Report Shallow Soil Gas Investigation, December 1986

Wahler Associates, Phase I Ground Water Investigation Work Plan, March 4, 1987.

Wahler Associates, Chemical Testing Results, Collection Sump, April 27, 1987.

Wahler Associates, Phase I Hydrogeologic Investigation, June 1987.

Wahler Associates, Site Inspection Report, June 1987.

Wahler Associates, On-Site Source Identification Investigation, July 1987.

Wahler Associates, Well Location Maps, July 30, 1987.

Wahler Associates, Collection and Disposal of Surface Runoff, September 16, 1987.

Wahler Associates, On-Site Runoff Management, November 2, 1987.

Wahler Associates, Phase II Hydrogeologic Investigation, November 1987.

Wahler Associates, Aquifer Testing Report, December 21, 1987.

Wahler Associates, Quality Assurance/Quality Control Project Plan, December 1987.

Wahler Associates, Sampling Plan, December 1987.

Wahler Associates, Site Health and Safety Plan, December 1987.

Wahler Associates, Proposal for Potential Conduit Investigation, December 1987.

Wahler Associates, Installation of Diesel Tank Monitoring Well, December 30, 1987.

Wahler Associates, Excavation and Removal of Diesel Tank, February 8, 1988.

Wahler Associates, Interim Runoff Management Plan, February 29, 1988.

Wahler Associates, Phase IIa Hydrogeologic Investigation, March 1988.

Wahler Associates, Potential Conduits Investigation Preliminary Report, March 1988.

Wahler Associates, Potential Conduits Investigation, May 1988.

Wahler Associates, Surface Water and Soil Sampling Investigation, May 6, 1988.

Wahler Associates, Destruction of Dry Wells, June 9, 1988

Wahler Associates, Evaluation of Interim Remedial Alternatives, Volume 1 and 2, June 1988.

Wahler Associates, Monthly Status Reports to California Regional Water Quality Control Board (CRWQCB), March 1987. to July 1988.

Wegman, D.H.; Levy, B.S. 1979 *Occupational Health Recognizing and Prevention of Work Related Disease*. Little, Brown and Company. Boston. pp. 526.

ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES IV
CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. C09008
ENDANGERMENT ASSESSMENT
FOR
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CA
EPA REGION IX
SITE ACCOUNT NUMBER: 9BF6

JACOBS ENGINEERING GROUP INC.

PROJECT NUMBER 05-B810-00

AUGUST 1989

LOCAL HYDROGEOLOGY FIGURES

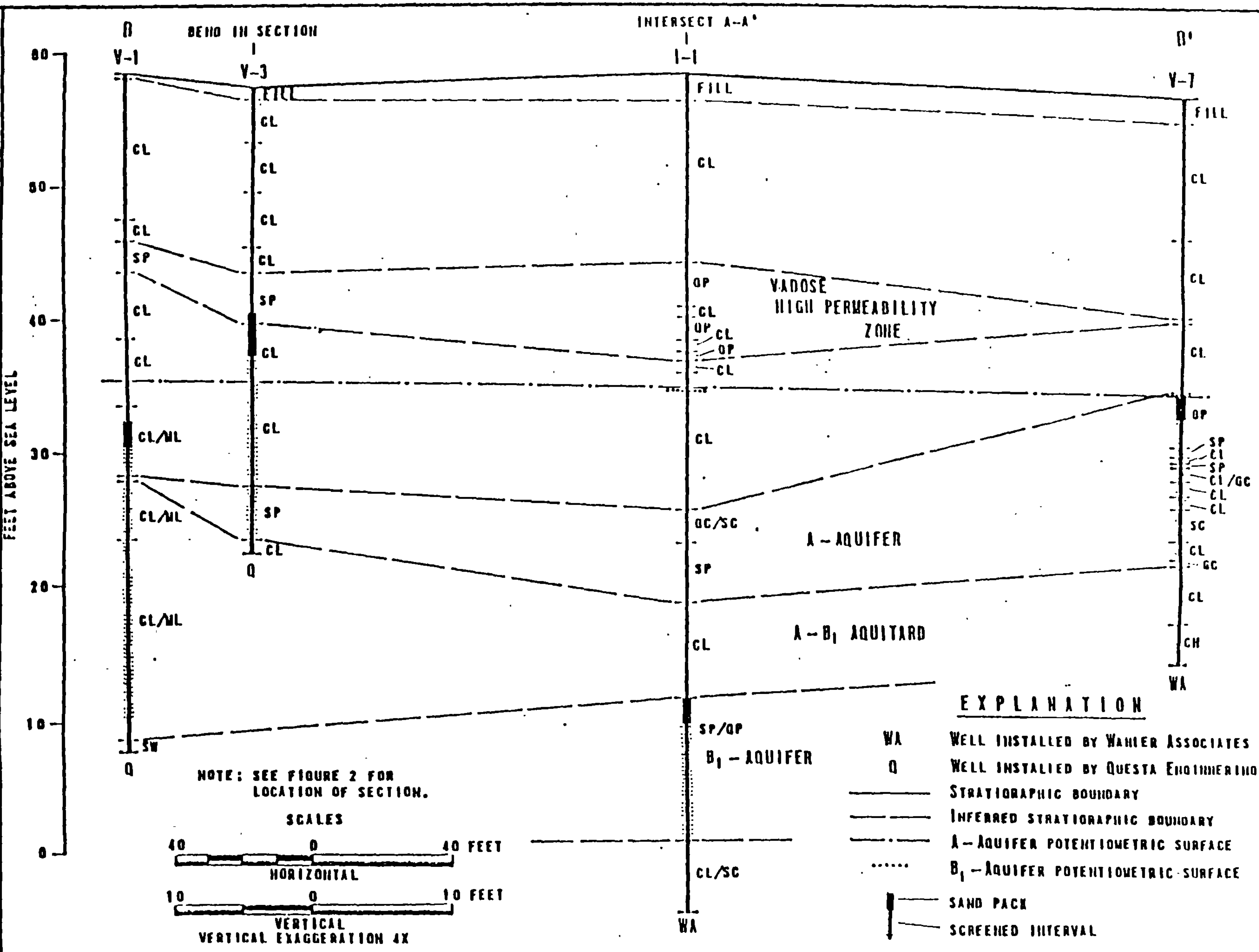
JE JACOBS ENGINEERING GROUP INC.

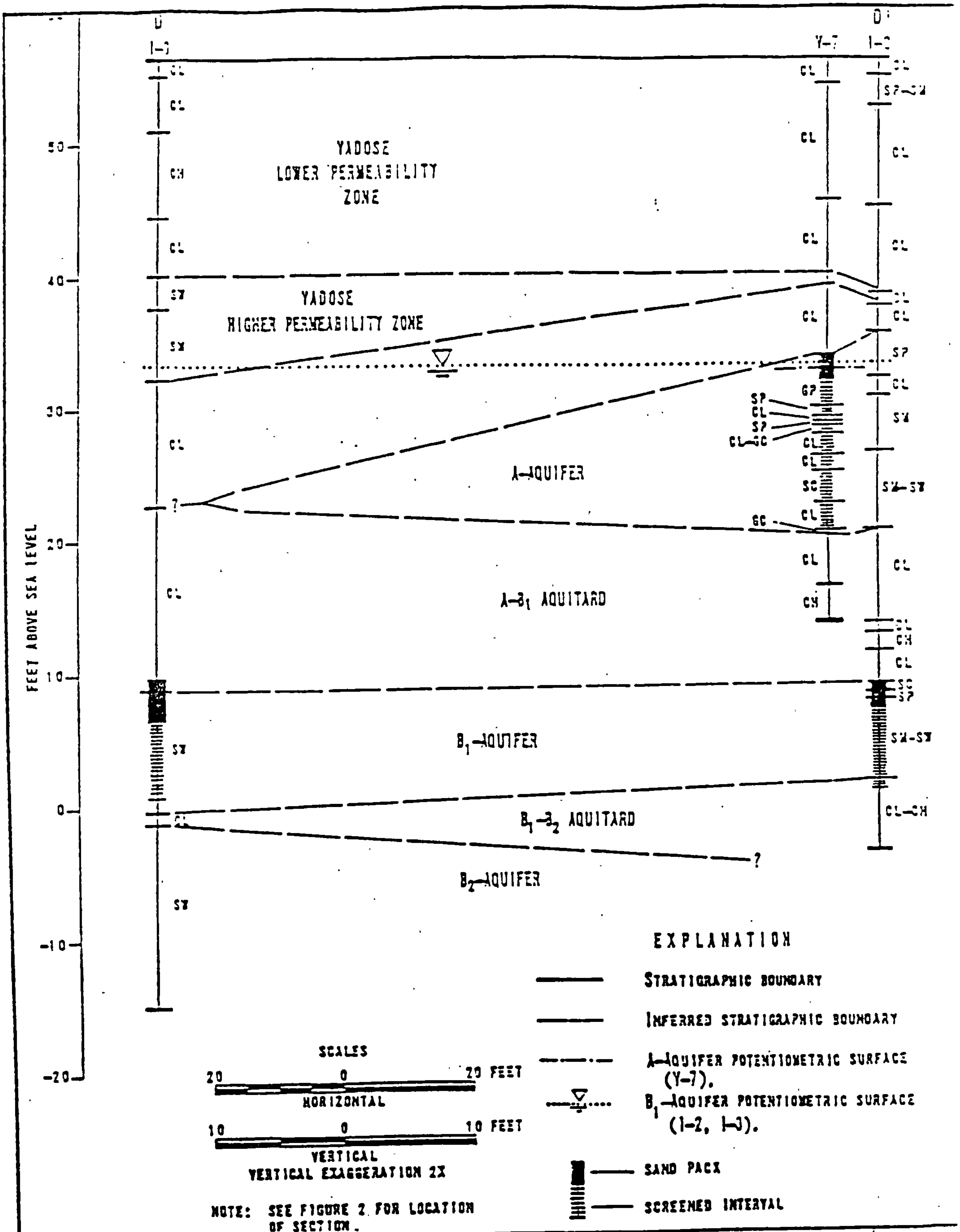
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

GEOLOGIC CROSS SECTION B - B'

Source: Wahler & Assoc.

FIGURE A-1





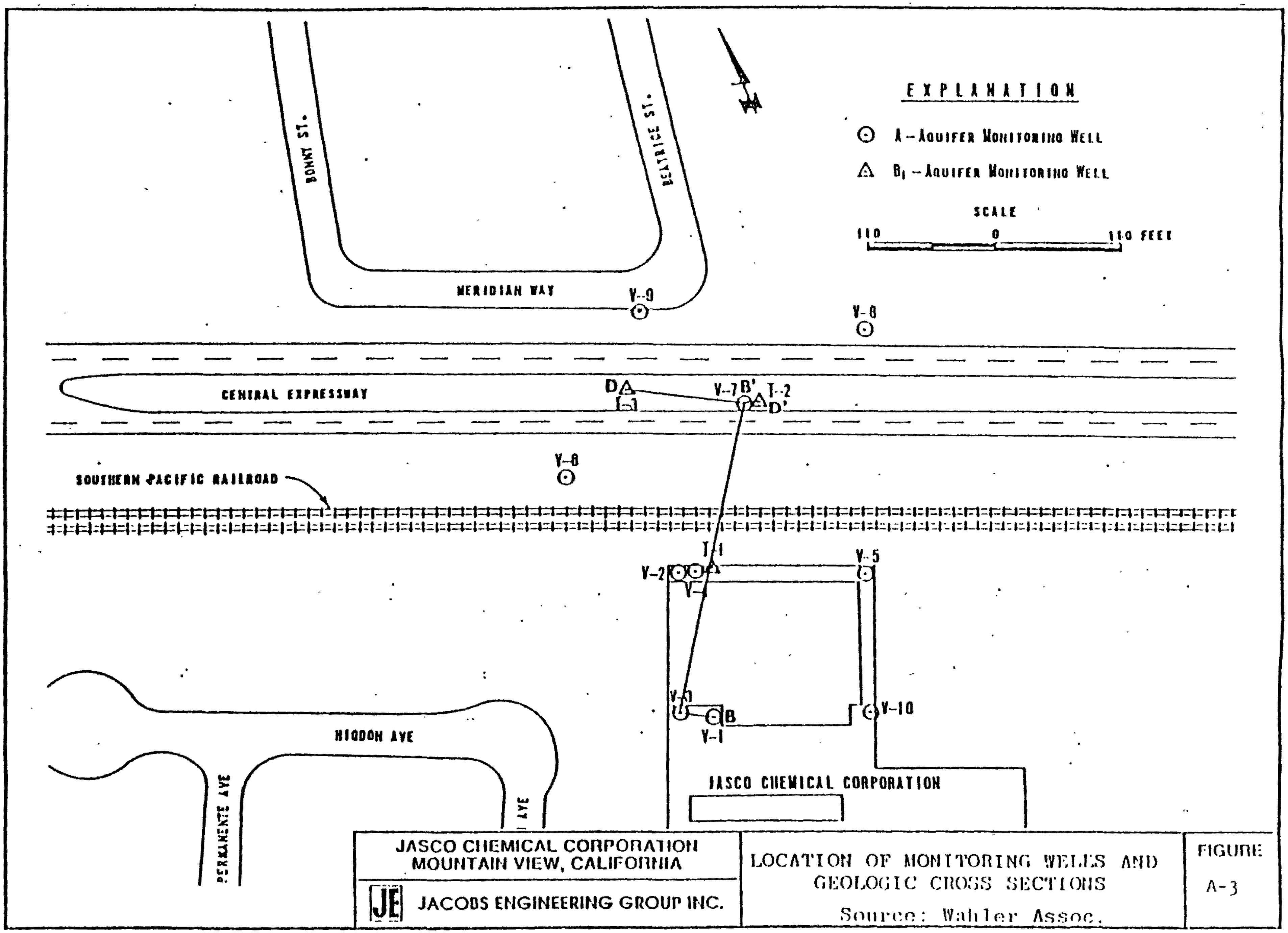
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JE JACOBS ENGINEERING GROUP INC.

GEOLOGIC CROSS SECTION D - D'

Source: Wahler Assoc.

FIGURE A-2



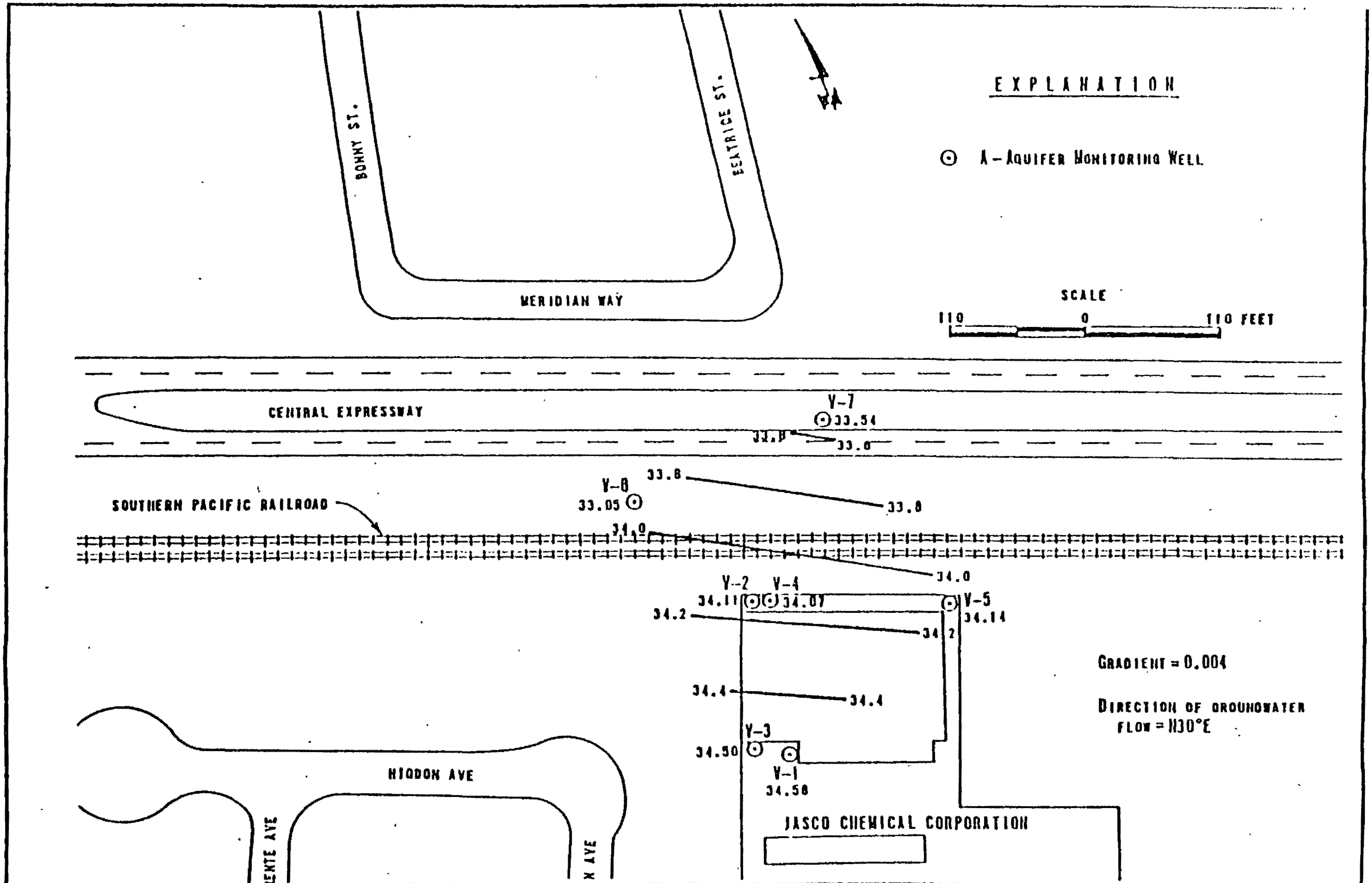
JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JACOBS ENGINEERING GROUP INC.

LOCATION OF MONITORING WELLS AND GEOLOGIC CROSS SECTIONS

Source: Wahler Assoc.

FIGURE A-3

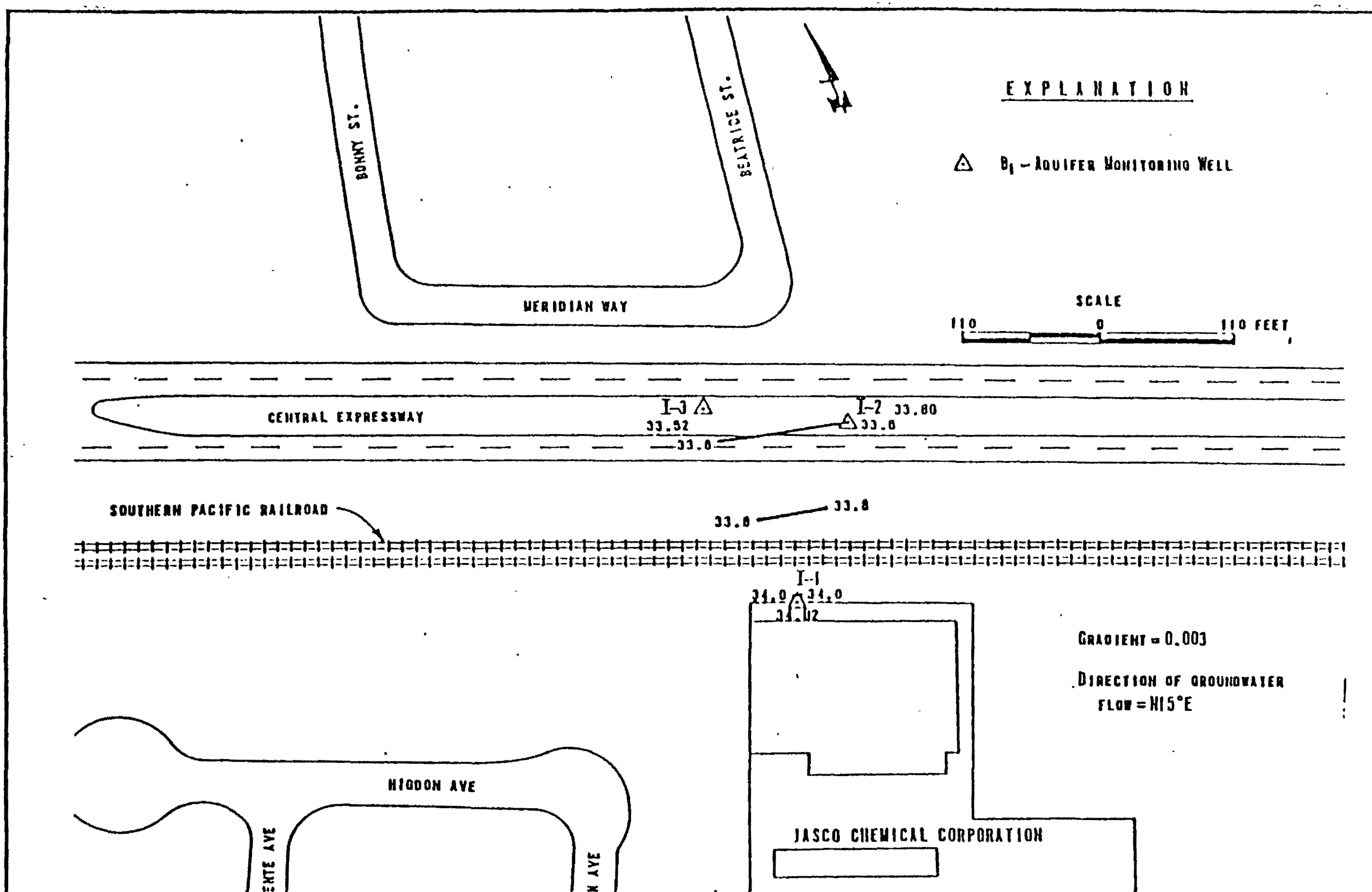


JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JACOBS ENGINEERING GROUP INC.

POTENTIOMETRIC SURFACE A-AQUIFER
October 7, 1987
Source: Wahler Assoc.

FIGURE A-4



JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JACOBS ENGINEERING GROUP INC.

POTENTIOMETRIC SURFACE B_1-AQUIFER
October 7, 1987
Source: Wahler Assoc.

FIGURE
A-5

REGIONAL GEOLOGY

REGIONAL GEOLOGY

The following description of the regional geology and hydrogeology is modified from the Endangerment Assessment for the Middlefield-Ellis-Whisman Site in Mountain View, California, prepared for Camp Dresser & McKee, Inc. by ICF-Clement, July 1, 1988.

The depositional history within the San Francisco Bay depression is geologically very young (less than two to three million years old). Deposition along the flanks of this depression, which includes the Jasco site, was largely controlled by repeated variations in sea level. These changes in sea level were associated with the cyclic advance and retreat of continental ice during the last ice age which ended approximately 15,000 years ago. Sediments found in the study area are the result of alluvial fan, interfluvial and estuarine processes.

Generally, during periods of low sea level, the ancestral Bay Area depression was the site of sediment accumulation from the surrounding highlands to the west and east. The streams originating in the surrounding hills deposited relatively coarse-grained alluvial fan material along the flanks of the bay. With respect to the Jasco site, these alluvial deposits are generally coarser towards the southwest (toward their source, the Santa Cruz Mountains).

During periods of high sea level, the Bay Area depression was flooded, and fine-grained estuarine sediments (deposited in intertidal zones) were incised by stream channels, which deposited irregularly emplaced coarse-grained materials. During subsequent periods of high sea level, finer-grained sediments were deposited in the existing stream channels. This irregular pattern of sediment accumulation was further enhanced by stream-braiding, flood-plain and levee building, and the deposition of alluvial fans.

This depositional history has resulted in an extremely complex sedimentary sequence characterized by irregular interbedding and interfingering of coarse and fine-grained deposits. These deposits exhibit a large degree of variability in both thickness and lateral continuity. Included with these deposits are buried stream channels that formerly drained from the Santa Cruz Mountains; the channel deposits interfingering with the estuarine deposits along the fringes of the Bay.

Although these stream channels are generally oriented from south to north, other orientations may be present locally.

It is unclear to what extent the basin level was modified by tectonic processes during the Pleistocene. However, the region is currently considered tectonically active, and tectonics probably influenced Quaternary sedimentation within the primordial Santa Clara Valley.

REGIONAL HYDROGEOLOGY

REGIONAL HYDROGEOLOGY

The fine-grained estuarine deposits are considered by Helley to have formed the current regional aquitards. In turn, the coarse-grained alluvial and fluvial deposits constitute the regional aquifers. Significant aquitards could also have developed in response to the formation of marshes along the lower section of alluvial fans. At times these alluvial marshes may have been gradational with estuarine marshes to the north. It is considered by Iwamura and Helley that fine-grained marsh deposits did not significantly extend beyond today's El Camino Real. This has been determined by the lack of regional aquitards between the base of the Santa Cruz Mountains and a line drawn at El Camino Real.

Hydrologic anisotropy of ground water flow has resulted from the complex regional depositional processes. Within the alluvial fan (coarse-grained) deposits of Santa Clara Valley, the direction of preferred flow (maximum anisotropy) is northward. Dip of the maximum anistropy vector would be roughly parallel with the ancestral structural basin at depth, with a decrease in dip upwards until the angle of repose for the alluvial fan is achieved. Anisotropy occurs within the upper- and mid-fan environment as a result of numerous fine-grained overbank deposits covering coarser-grained channel deposits after lateral shifting of alluvial stream channels. The maximum anisotropy associated with fluvial deposits of the Santa Clara Valley Basin is along the axis of channel deposition.

Anisotropy within the lower-fan and estuarine marsh (finer-grained) deposits occurs because these deposits create confining layers between the coarser-grained deposits associated with alluvial and fluvial processes. This is characteristic of the area between El Camino Real and the approximate edge of the current San Francisco Bay. In this region, the preferred flow direction is parallel to layers of fine-grained material.

DISTRIBUTION OF CHEMICALS DETECTED IN SOILS AND GROUND WATER

PARTIALLY SCANNED
OVERSIZE ITEM(S)

See document # 2279362
for partially scanned image(s).

FIGURE A-6

For complete hardcopy version of the oversize document
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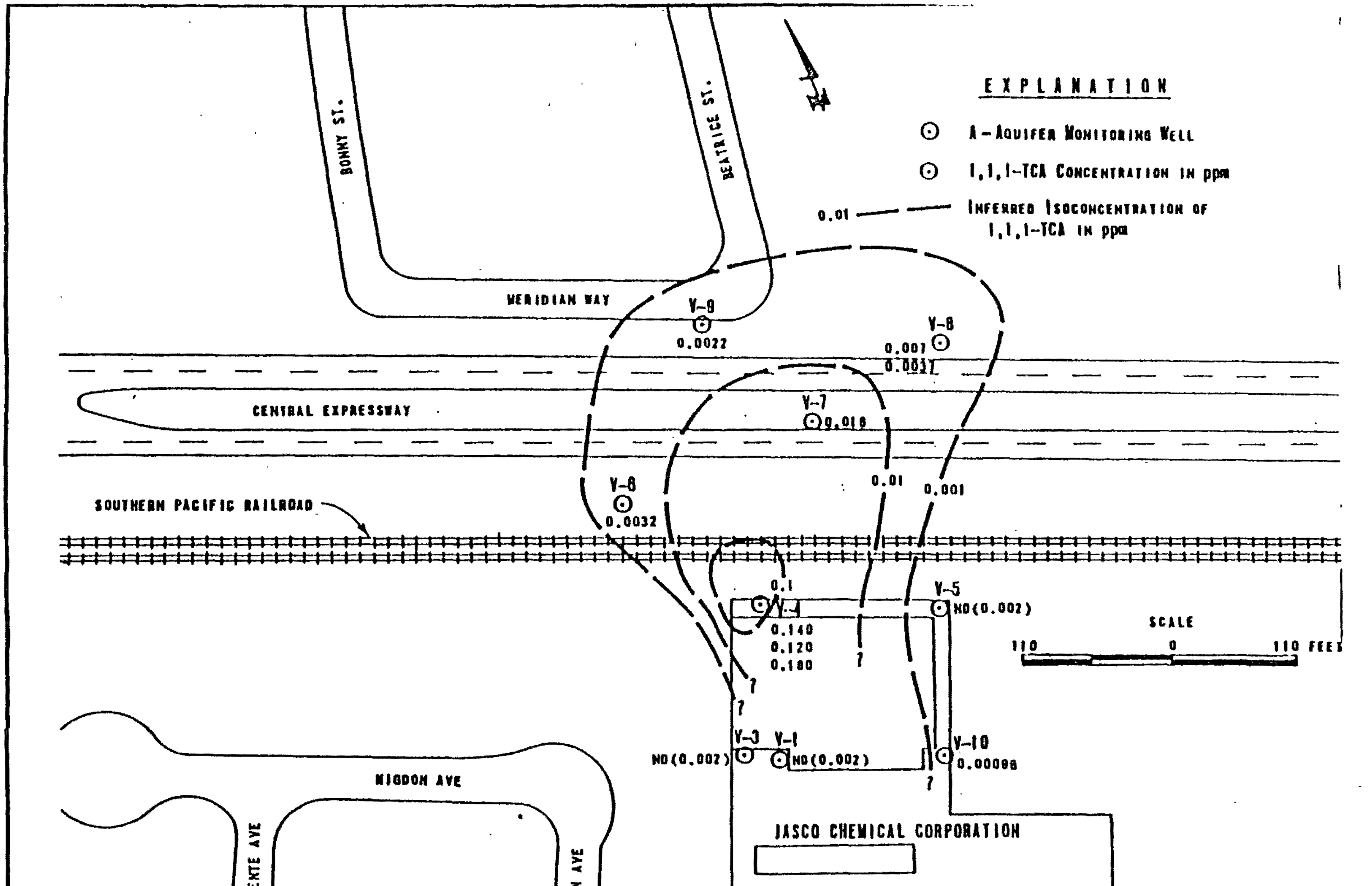
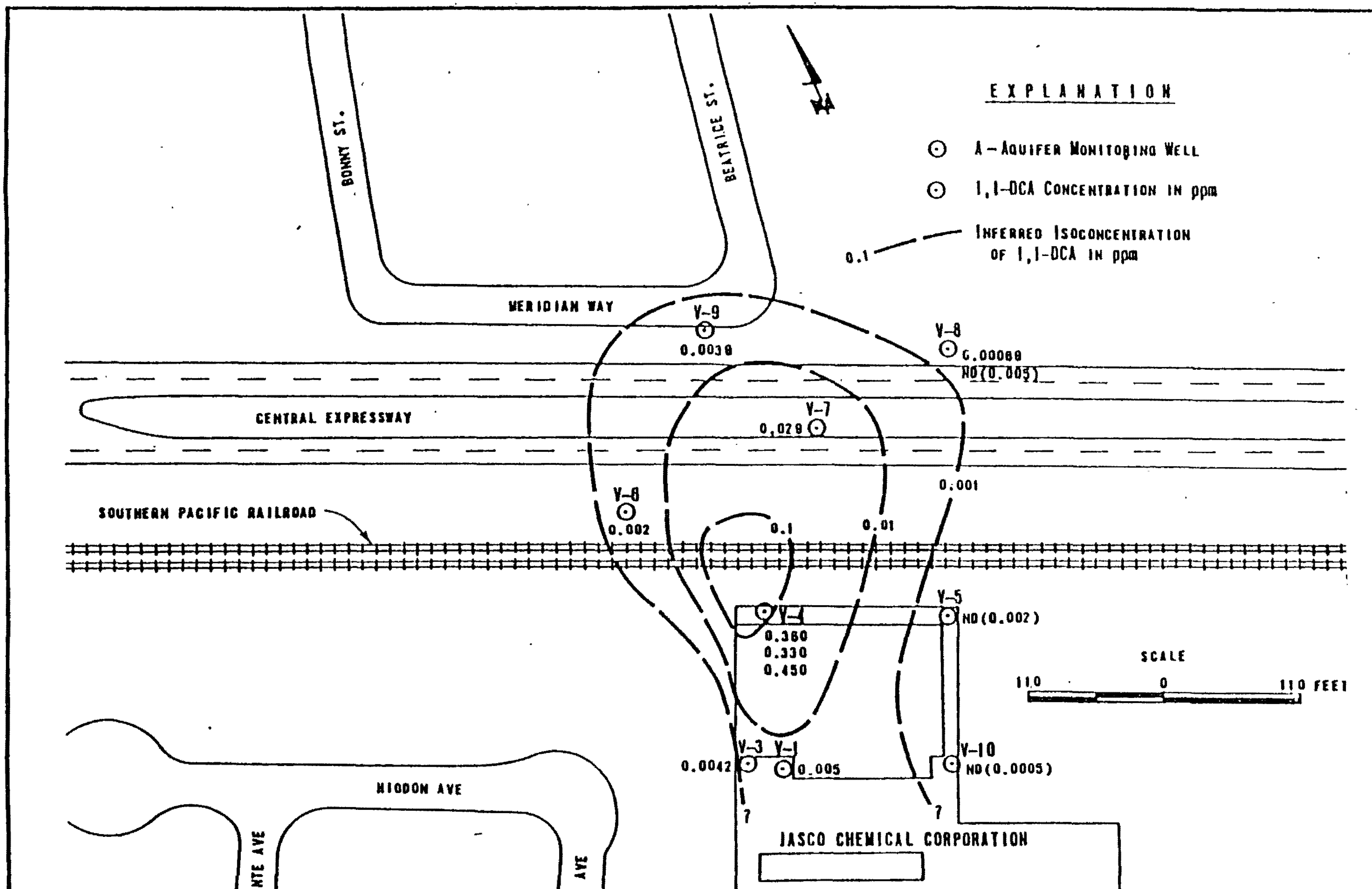


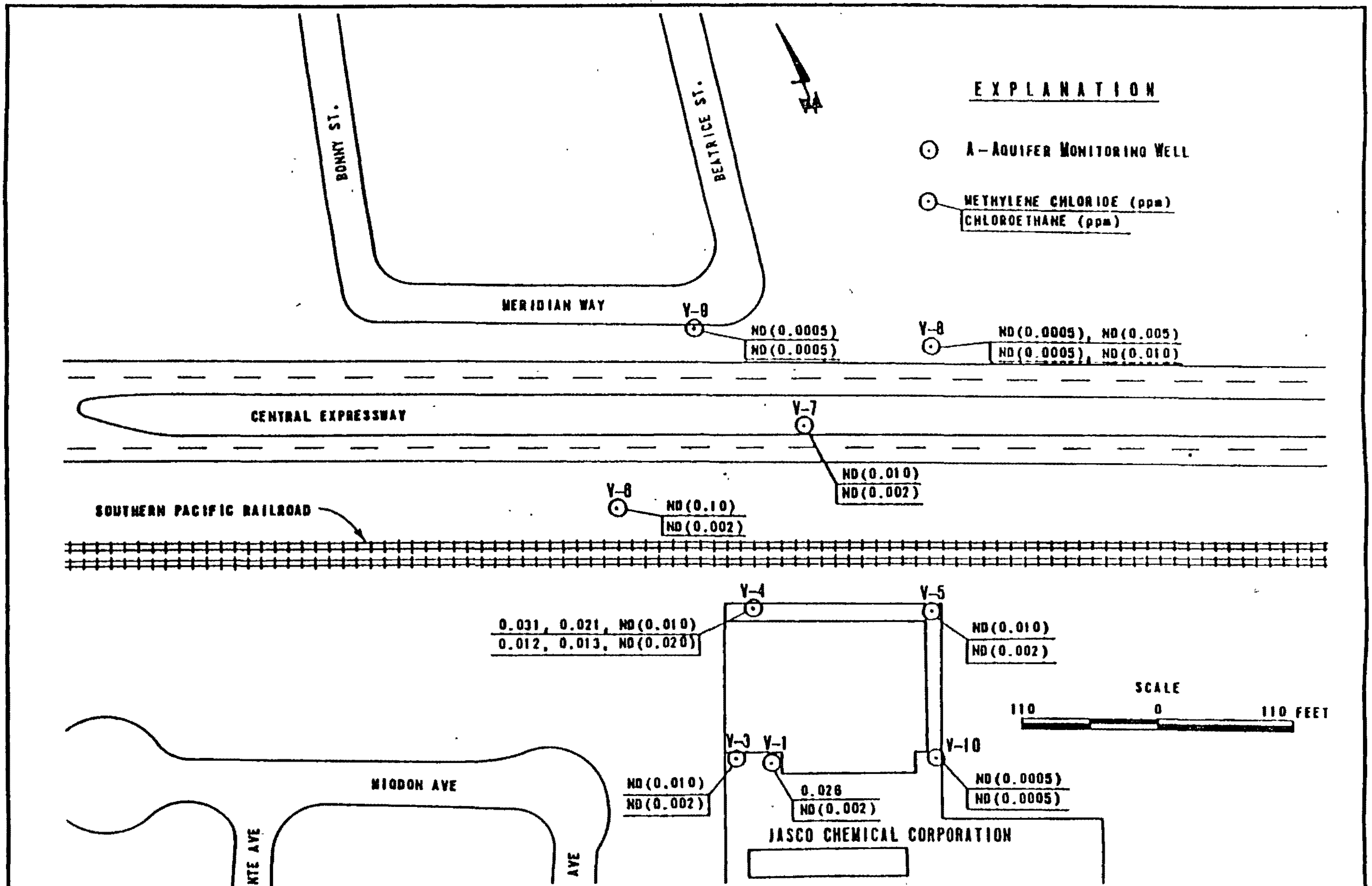
JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA JE JACOBS ENGINEERING GROUP INC.	DISTRIBUTION OF 1,1,1-TCA IN A-AQUIFER MONITORING WELLS March 22-24, 1988	FIGURE A-7

Source: Wahler Assoc.



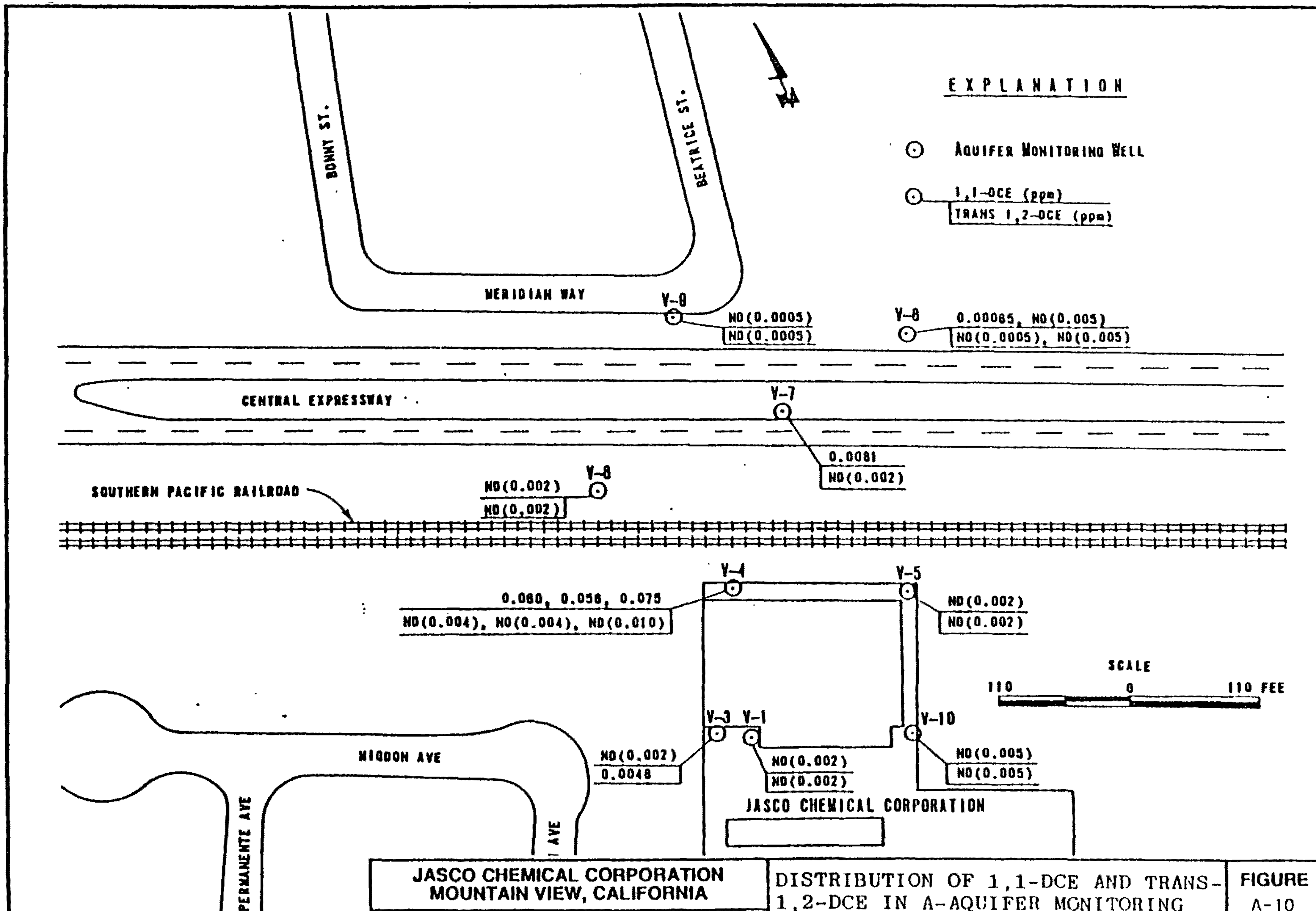
JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA	DISTRIBUTION OF 1,1-DCA IN A-AQUIFER MONITORING WELLS March 22-24, 1988	FIGURE A-8
JE JACOBS ENGINEERING GROUP INC.		

Source: Wahler Assoc.



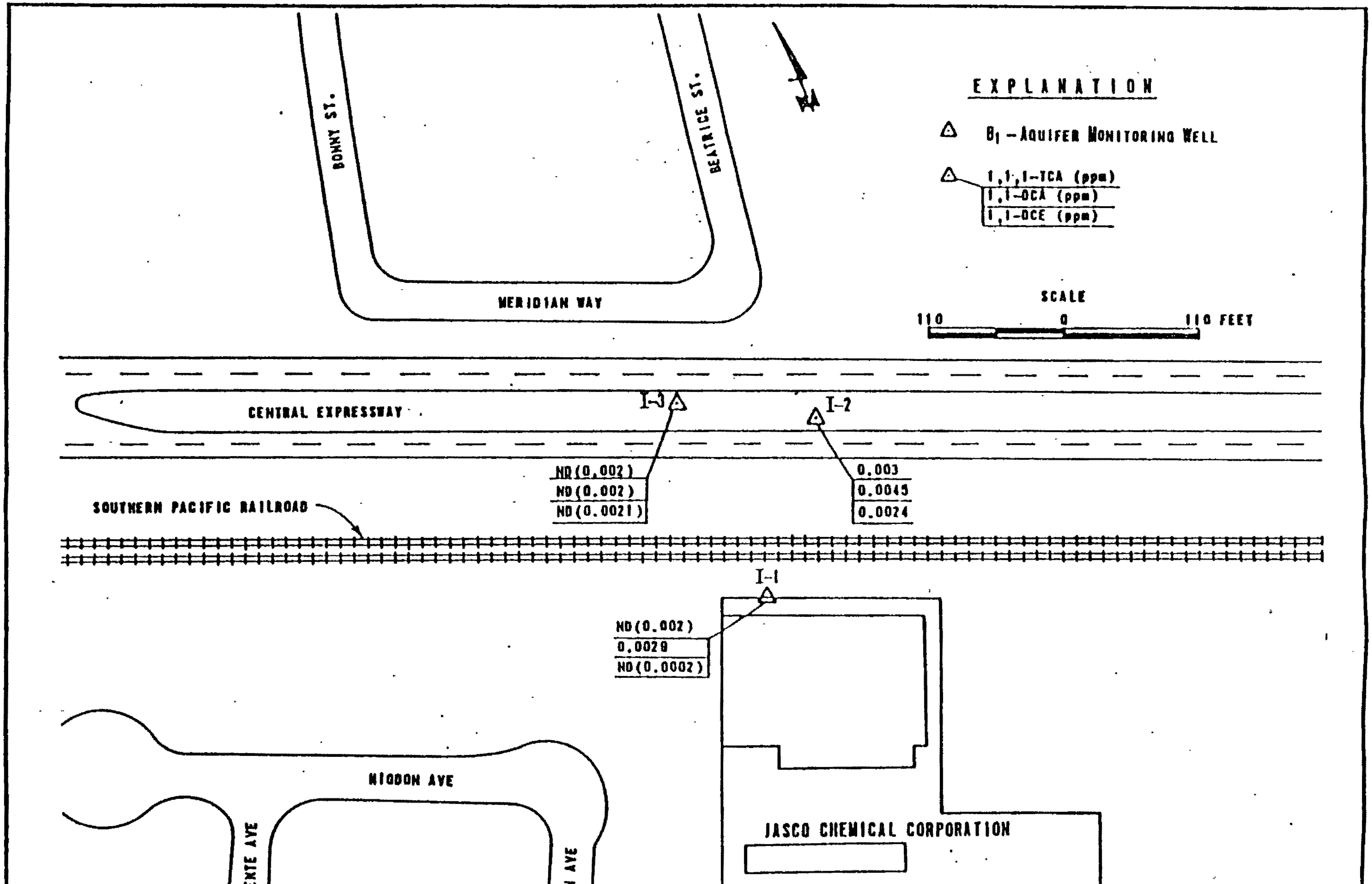
JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA	DISTRIBUTION OF METHYLENE CHLORIDE & CHLOROETHANE IN A-AQUIFER MONITORING WELLS-March 22-24, 1988	FIGURE A-9
JE JACOBS ENGINEERING GROUP INC.		

Source: Wahler Assoc.



JASCO CHEMICAL CORPORATION MOUNTAIN VIEW, CALIFORNIA JE JACOBS ENGINEERING GROUP INC.	DISTRIBUTION OF 1,1-DCE AND TRANS-1,2-DCE IN A-AQUIFER MONITORING WELLS - March 22-24, 1988	FIGURE A-10

Source: Wahler Assoc.



JASCO CHEMICAL CORPORATION
MOUNTAIN VIEW, CALIFORNIA

JACOBS ENGINEERING GROUP INC.

DISTRIBUTION OF CHEMICALS WITHIN B_1-AQUIFER MONITORING WELLS
March 22 -23, 1988

FIGURE A-11

Source: Wahler Assoc.

TABLE A-1: CHEMICAL ANALYSIS RESULTS A-AQUIFER GROUND WATER SAMPLES (ppm)

WELL NAME	METHOD/ LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	1,1-DCA
V-1	?	02-04-84	0.09000	—	—	—
V-1	AN/?	04-04-85	<0.01000	--	—	—
V-1	W/?	11-05-86	—	—	—	—
V-1	S/a	08-27-87	ND	ND	ND	ND
V-1	S/a	09-24-87	ND	ND	ND	0.00570
V-1	S/601/602	01-11-88	0.01400	--	0.00310	0.00400
V-1	S/8240	03-24-88	—	--	ND	0.00520
V-2	A/?	08-27-86	<0.01500	—	—	—
V-2	AN/?	10-06-86	<0.01500	—	—	—
V-2	W/?	11-05-86	—	—	—	—
V-2	S/601	12-17-87	—	—	0.17000	0.33000
V-2	SEL/601	02-23-87	—	—	<0.50000	<0.50000
V-2	S/601	03-02-87	—	—	0.26000	1.20000
V-2	S/601	03-19-87	—	—	<0.25000	0.92000
V-2	S/601	05-05-87	—	—	0.03600	0.54000
V-2	S/624	06-22-87	—	ND	0.14000	0.33000
V-2	AN/601/602+	08-27-87	ND	0.02000	ND	0.53000
V-2	S/a	08-27-87	ND	ND	ND	0.63000
V-2	S/a	09-25-87	0.95000	ND	ND	0.49000
V-2	ANR/601/602+	09-25-87	—	0.00700	0.02600	0.70000
V-2	S/601/602+	01-11-88	1.00000	—	0.15000	0.25000
V-2	DUP S/601/602+	01-11-88	—	—	0.00400	0.36000
V-2	AN/601/8010	01-11-88	—	—	ND	0.52000
V-3	W/?	11-05-86	1.00000	—	—	—
V-3	S/624/622	01-30-87	—	ND	<0.00250	<0.00250
V-3	S/a	08-25-87	ND	ND	ND	0.01500
V-3	S/a	09-25-87	ND	ND	ND	0.02660
V-3	S/601/602+	01-05-88	ND	—	ND	0.02500
V-3	S/624+	03-09-88	—	—	—	0.00600
V-3	AN/624	03-09-88	—	—	—	0.00700
V-3	S/8240/8270	05-22-88	—	ND	ND	0.02400
V-3	S/8240/8270	05-02-88	—	ND	ND	0.02410
V-4	S/601	04-03-87	—	—	0.16000	2.20000
V-4	S/601	05-20-87	—	—	0.01200	1.30000
V-4	S/624	06-22-87	—	ND	0.26500	0.56000
V-4	S/a	08-27-87	ND	ND	ND	0.42000
V-4	S/601/602+	09-25-87	—	ND	0.06300	0.30000
V-4	ANR/601/602+	09-25-87	—	ND	0.05900	1.00000
V-4	S/a	09-25-87	ND	ND	0.23900	0.31000
V-4	S/601/602	01-08-88	0.01500	—	0.02500	0.53000
V-4	DUP S/601/602	01-08-88	—	—	0.04100	0.55000
V-4	ANA/601/8010	01-05-88	—	—	ND	0.99000
V-4	S/8240	03-22-88	—	—	0.01200	0.36000
V-4	S/8240	03-22-88	—	—	0.01300	0.33000

CHEMICAL ANALYSIS RESULTS

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	1,1-DCA
V-5	A/624	05-05-87	—	—	<0.00520	<0.00470
V-5	S/624	06-22-87	—	ND	ND	ND
V-5	S/a	08-27-87	ND	ND	ND	ND
V-5	S/a	09-24-87	ND	ND	ND	ND
V-5	S/601/602+	01-11-88	ND	—	ND	ND
V-5	S/8240	03-23-88	—	—	ND	ND
V-6	A/624	05-05-87	—	—	<0.00520	<0.00470
V-6	S/624	06-22-87	—	ND	ND	ND
V-6	S/a	08-28-87	ND	ND	ND	ND
V-6	S/a	09-24-87	ND	0.00170	ND	ND
V-6	S/601/602+	01-11-88	ND	—	ND	ND
V-6	S/8240	03-23-88	—	—	ND	ND
V-7	A/624	05-05-87	—	—	<0.00500	0.05500
V-7	S/624	06-22-87	—	ND	ND	0.04900
V-7	S/a	08-28-87	ND	ND	ND	0.02400
V-7	S/a	09-25-87	ND	ND	ND	0.01500
V-7	S/601/602+	01-11-88	ND	—	ND	0.01400
V-7	S/8240	03-23-88	—	—	ND	0.02900
V-8	S/624	03-08-88	0.30300	ND	ND	ND
V-8	S/8010/8020	03-22-88	ND	ND	ND	0.00067
V-8	A/624	03-22-88	ND	ND	ND	ND
V-9	S/624	03-08-88	ND	ND	ND	0.00360
V-9	S/8010/8020	03-22-88	—	—	ND	0.00370
V-10	S/624	03-09-88	ND	ND	ND	ND
V-10	S/8010/8020	03-22-88	—	—	ND	ND

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	1,1-DCE	1,2-DCA	TRANS 1,2-DCE	ETHYLBENZENE
V-1	?	06-04-84	—	—	—	—
V-1	AN/?	04-04-85	—	—	—	—
V-1	W/?	11-05-86	—	—	—	—
V-1	S/a	08-27-87	ND	ND	ND	—
V-1	S/a	09-24-87	0.00653	ND	0.00148	—
V-1	S/601/602	01-11-88	0.00872	ND	0.00150	ND
V-1	S/8240	03-24-88	ND	—	ND	—
V-2	W/?	08-27-86	—	—	—	—
V-2	AN/?	10-06-86	—	—	—	—
V-2	W/?	11-05-86	—	—	—	—
V-2	S/601	12-17-87	<0.00500	—	—	—
V-2	SEL/601	02-10-87	<0.50000	2.50000	—	—
V-2	S/601	03-02-87	0.11000	—	—	—
V-2	S/601	03-19-87	<0.32000	—	—	—
V-2	S/601	05-05-87	0.25100	—	—	—
V-2	S/624	06-22-87	0.02900	ND	0.01500	ND
V-2	AN/601/602+	08-27-87	ND	ND	ND	—
V-2	S/a	08-27-87	ND	ND	ND	—
V-2	S/a	09-25-87	ND	ND	ND	—
V-2	ANR/601/602+	09-25-87	0.07600	ND	ND	—
V-2	S/601/602+	01-11-88	0.02600	0.00650	0.00460	0.01200
V-2	DUP S/601/602+	01-11-88	0.00200	ND	0.00510	0.00760
V-2	AN/601/8010	01-11-88	ND	ND	ND	0.05700
V-3	W/?	11-05-86	—	—	—	—
V-3	S/624/602	01-30-87	<0.00050	—	0.06400	—
V-3	S/a	08-25-87	0.00130	0.0010	0.21200	—
V-3	S/a	09-25-87	0.00076	ND	0.00910	—
V-3	S/601/602+	01-06-88	0.00060	ND	0.00400	ND
V-3	S/624+	03-09-88	—	—	0.00400	—
V-3	AN/624	03-09-88	—	—	ND	—
V-3	S/8240/8270	03-22-88	ND	—	0.00400	ND
V-3	S/8240/8270	05-02-88	ND	—	0.02500	ND
V-4	S/601	04-03-87	0.17000	—	—	—
V-4	S/601	05-12-87	0.14000	—	—	—
V-4	S/624	06-22-87	0.15000	ND	0.20500	ND
V-4	S/a	08-27-87	0.03600	ND	ND	—
V-4	S/601/602+	09-25-87	0.01600	ND	ND	—
V-4	ANR/601/602+	09-25-87	0.02000	0.00600	ND	—
V-4	S/a	09-25-87	0.01400	ND	ND	—
V-4	S/601/602	01-06-88	0.06300	0.04100	ND	ND
V-4	DUP S/601/602	01-06-88	0.07500	0.05200	ND	ND
V-4	ANA/601/8010	01-06-88	0.07300	ND	ND	ND
V-4	S/8240	03-22-88	0.06200	—	ND	—
V-4	S/8240	03-22-88	0.05500	—	ND	—

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	1,1-DCE	1,2-DCA	TRANS 1,2-DCE	ETHYLBENZENE
V-5	A/624	05-05-87	<0.00250	—	—	—
V-5	S/624	06-22-87	ND	ND	ND	ND
V-5	S/a	08-27-87	ND	ND	ND	—
V-5	S/a	09-24-87	ND	ND	ND	—
V-5	S/601/602+	01-11-88	ND	ND	ND	ND
V-5	S/8240	03-23-88	ND	—	ND	—
V-6	A/624	05-05-87	<0.00250	—	—	—
V-6	S/624	06-22-87	ND	ND	ND	ND
V-6	S/a	08-27-87	ND	ND	ND	—
V-6	S/a	09-24-87	ND	ND	ND	—
V-6	S/601/602+	01-11-88	ND	ND	ND	ND
V-6	S/8240	03-23-88	ND	—	ND	—
V-7	A/624	05-05-87	0.00770	—	—	—
V-7	S/624	06-22-87	ND	ND	ND	ND
V-7	S/a	08-25-87	0.00190	ND	ND	—
V-7	S/a	09-25-87	0.00240	ND	ND	—
V-7	S/601/602+	01-11-88	0.00350	ND	ND	ND
V-7	S/8240	03-23-88	0.00810	—	ND	—
V-8	S/624	03-08-88	ND	ND	ND	ND
V-8	S/8010/8020	03-22-88	0.00065	ND	ND	ND
V-8	A/624	03-22-88	ND	ND	ND	ND
V-9	S/624	03-08-88	ND	ND	ND	ND
V-9	S/8010/8020	03-22-88	ND	ND	ND	ND
V-10	S/624	03-09-88	ND	ND	ND	—
V-10	S/8010/8020	03-22-88	ND	ND	ND	—

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	METHYLENE CHLORIDE	MEK	PCP	TETRACHLORO-ETHENE
V-1	?	06-04-84	<0.00500	0.08400	0.20020	--
V-1	AN/?	04-04-85	0.01000	—	0.00100	—
V-1	W/?	11-05-86	0.01000	—	—	—
V-1	S/a	08-27-87	ND	ND	—	—
V-1	S/a	09-24-87	ND	ND	--	—
V-1	S/601/602	01-11-88	0.00140	ND	ND	—
V-1	S/8240	03-24-88	0.02200	—	--	—
V-2	W/?	06-27-86	3.20000	<0.01500	0.00150	—
V-2	AN/?	10-06-86	3.20000	<0.01500	0.00150	<2.00500
V-2	W/?	11-05-86	142.00000	—	—	—
V-2	S/601	12-17-87	30.00000	—	—	0.00600
V-2	SEL/601	02-20-87	56.00000	—	—	—
V-2	S/601	03-02-87	1.60000	—	—	—
V-2	S/601	03-19-87	2.40000	—	—	—
V-2	S/601	05-05-87	0.70000	—	—	—
V-2	S/624	06-22-87	0.54000	—	—	ND
V-2	AN/601/602+	06-27-87	1.70000	ND	—	—
V-2	S/a	08-27-87	0.27000	ND	—	—
V-2	S/a	09-25-87	0.22000	ND	—	—
V-2	ANR/601/602+	09-25-87	4.60000	0.02700	—	—
V-2	S/601/602+	01-11-88	6.60000	0.01400	—	0.00600
V-2	DUP S/601/602+	01-11-88	5.30000	0.00210	—	ND
V-2	AN/601/8010	01-11-88	0.00000	0.15000	—	ND
V-3	W/?	11-05-86	0.00760	<1.00000	0.05000	—
V-3	S/624/602	01-30-87	<0.00050	—	—	—
V-3	S/a	08-20-87	0.00400	ND	—	—
V-3	S/a	09-25-87	0.01000	ND	—	—
V-3	S/601/602+	01-09-88	0.00250	ND	—	ND
V-3	S/624-	03-09-88	--	—	—	—
V-3	AN/624	03-09-88	--	—	—	—
V-3	S/8240/8270	03-22-88	ND	—	ND	ND
V-3	S/8240/8270	05-02-88	ND	—	ND	ND
V-4	S/601	04-23-87	1.40000	—	—	—
V-4	S/601	05-20-87	0.49000	—	—	—
V-4	S/624	06-22-87	0.11000	—	—	ND
V-4	S/a	08-27-87	ND	ND	—	—
V-4	S/601/602+	09-25-87	ND	ND	—	—
V-4	ANR/601/602+	09-25-87	0.00300	ND	—	—
V-4	S/a	09-25-87	ND	ND	—	—
V-4	S/601/602	01-08-88	0.21000	ND	—	ND
V-4	DUP S/601/602	01-08-88	0.22000	ND	—	ND
V-4	ANA/601/8010	01-08-88	0.30000	ND	—	ND
V-4	S/8240	03-22-88	0.00100	—	—	—
V-4	S/8240	03-22-88	0.02100	—	—	—

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	METHYLENE CHLORIDE	MEK	PCP	TETRACHLORO-ETHENE
V-5	A/624	05-05-87	<0.00250	—	--	—
V-5	S/624	06-22-87	ND	—	--	ND
V-5	S/a	08-27-87	ND	ND	--	—
V-5	S/a	09-24-87	ND	ND	—	--
V-5	S/601/602-	01-11-88	ND	ND	--	ND
V-5	S/8240	03-22-88	ND	—	--	—
V-6	A/624	05-05-87	<0.00250	—	--	--
V-6	S/624	06-22-87	ND	—	--	ND
V-6	S/a	08-28-87	ND	ND	--	—
V-6	S/a	09-24-87	ND	ND	--	—
V-6	S/601/602-	01-11-88	ND	ND	--	ND
V-6	S/8240	03-22-88	ND	—	—	—
V-7	A/624	05-05-87	<0.00250	—	—	—
V-7	S/624	06-22-87	ND	—	ND	—
V-7	S/a	08-28-87	ND	ND	--	—
V-7	S/a	09-25-87	ND	ND	—	—
V-7	S/601/602-	01-11-88	ND	ND	—	ND
V-7	S/8240	03-22-88	ND	—	—	—
V-8	S/624	03-08-88	ND	—	ND	ND
V-8	S/8010/8020	03-22-88	ND	ND	—	ND
V-8	A/624	03-22-88	ND	ND	—	ND
V-9	S/624	03-09-88	ND	—	—	ND
V-9	S/8010/8020	03-22-88	ND	—	—	ND
V-10	S/624	03-09-88	ND	ND	ND	ND
V-10	S/8010/8020	03-22-88	ND	—	--	ND

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	TOLUENE	1,1,1-TCA	TCE	VINYL CHLORIDE
V-1	?	02-04-84	—	0.00922	—	—
V-1	AN/?	04-04-85	—	—	—	—
V-1	W/?	11-05-86	—	—	—	—
V-1	S/a	08-27-87	ND	ND	ND	ND
V-1	S/a	09-24-87	ND	ND	ND	ND
V-1	S/601/602	01-11-88	ND	ND	ND	ND
V-1	S/8240	03-24-88	—	ND	—	—
V-2	W/?	08-27-86	—	0.00600	—	—
V-2	AN/?	10-06-86	—	<0.00600	—	—
V-2	W/?	11-05-86	—	—	—	—
V-2	S/601	12-17-87	—	0.54000	0.01900	<0.00500
V-2	SEL/601	02-18-87	—	2.04000	<0.50000	<0.50000
V-2	S/601	03-03-87	—	0.61000	<0.05000	<0.05000
V-2	S/601	03-19-87	—	0.51000	<0.05000	<0.05000
V-2	S/601	05-05-87	—	0.41000	0.01300	0.00510
V-2	S/624	06-22-87	0.01500	0.37700	0.00220	0.00920
V-2	AN/601/602+	08-27-87	0.25000	0.20000	ND	ND
V-2	S/a	08-27-87	ND	0.27000	ND	ND
V-2	S/a	09-25-87	ND	0.53000	ND	ND
V-2	ANR/601/602+	09-25-87	0.29000	0.50000	ND	ND
V-2	S/601/602+	01-11-88	0.03500	0.20000	0.01200	0.00720
V-2	DUP S/601/602+	01-11-88	0.02100	0.24000	0.00950	0.00410
V-2	AN/601/8010	01-11-88	0.36000	0.17000	ND	ND
V-3	W/?	11-05-86	—	<0.00050	—	—
V-3	S/624/602	01-30-87	ND	<0.00050	<0.00050	<0.00050
V-3	S/a	08-28-87	ND	0.00190	ND	ND
V-3	S/a	09-25-87	ND	0.00110	ND	0.00065
V-3	S/601/602+	01-08-88	ND	0.00060	ND	0.00063
V-3	S/624+	03-09-88	—	—	—	—
V-3	AN/624	03-09-88	—	—	—	—
V-3	S/8240/8270	03-22-88	ND	—	ND	ND
V-3	S/8240/8270	05-02-88	ND	—	ND	ND
V-4	S/601	04-03-87	—	1.30000	<0.01000	0.01100
V-4	S/601	05-20-87	—	0.79000	<0.00500	<0.02500
V-4	S/624	06-22-87	0.00300	0.17000	ND	0.01600
V-4	S/a	08-27-87	ND	0.26000	ND	ND
V-4	S/601/602+	09-25-87	ND	0.03100	ND	ND
V-4	ANR/601/602+	09-25-87	0.01700	0.20000	ND	ND
V-4	S/a	09-25-87	ND	0.23000	ND	ND
V-4	S/601/602	01-05-88	0.01400	0.25000	0.00050	0.01000
V-4	DUP S/601/602	01-05-88	0.01000	0.25000	ND	0.01500
V-4	ANA/601/8010	01-22-88	ND	0.54000	ND	ND
V-4	S/8240	03-22-88	—	0.14000	—	—
V-4	S/8240	03-22-88	—	0.12000	—	—

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	TOLUENE	1,1,1-TCA	TCE	VINYL CHLORIDE
V-5	A/624	05-05-87	--	<0.00200	<0.00190	<0.02500
V-5	S/624	06-22-87	ND	ND	ND	ND
V-5	S/a	08-27-87	ND	ND	ND	ND
V-5	S/a	09-24-87	ND	ND	ND	ND
V-5	S/601/602	01-11-88	ND	ND	ND	ND
V-5	S/8240	03-22-88	—	ND	—	—
V-6	A/624	05-05-87	--	<0.00200	<0.00190	<0.02500
V-6	S/624	06-22-87	ND	ND	ND	ND
V-6	S/a	08-28-87	ND	0.00250	ND	ND
V-6	S/a	09-24-87	ND	0.00450	ND	ND
V-6	S/601/602	01-11-88	ND	0.00260	ND	ND
V-6	S/8240	03-23-88	—	ND	—	—
V-7	A/624	05-05-87	—	0.06400	<0.00190	<0.02500
V-7	S/624	06-22-87	ND	0.02300	ND	ND
V-7	S/a	08-28-87	ND	0.01600	ND	ND
V-7	S/a	09-25-87	ND	0.02300	ND	ND
V-7	S/601/602	01-11-88	ND	0.01200	ND	0.00120
V-7	S/8240	03-23-88	—	0.01500	ND	—
V-8	S/624	03-08-88	ND	0.00350	ND	ND
V-8	S/8010/8020	03-22-88	ND	0.00370	ND	ND
V-8	A/624	03-22-88	ND	0.00700	ND	ND
V-9	S/624	03-08-88	ND	ND	ND	ND
V-9	S/8010/8020	03-22-88	ND	0.00200	ND	ND
V-10	S/624	03-09-88	ND	ND	ND	ND
V-10	S/8010/8020	03-22-88	ND	0.0090	ND	ND

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	XYLENE
V-1	?	06-04-84	—
V-1	AN/?	04-04-85	—
V-1	W/?	11-05-86	—
V-1	S/a	08-27-87	ND
V-1	S/a	09-24-87	ND
V-1	S/601/602	01-11-88	ND
V-1	S/8240	03-24-88	—
V-2	A/?	08-27-85	--
V-2	AN/?	10-06-85	--
V-2	W/?	11-05-86	—
V-2	S/601	12-17-87	—
V-2	SEL/601	02-28-87	—
V-2	S/601	03-02-87	—
V-2	S/601	03-19-87	—
V-2	S/601	05-05-87	—
V-2	S/624	06-22-87	—
V-2	AN/601/602+	08-27-87	0.25000
V-2	S/a	08-27-87	ND
V-2	S/a	09-25-87	0.02600
V-2	ANR/601/602+	09-25-87	0.04400
V-2	S/601/602+	01-11-88	0.20900
V-2	DUP S/601/602+	01-11-88	0.06200
V-2	AN/601/8010	01-11-88	0.03500
V-3	W/?	11-05-86	—
V-3	S/624/602	01-30-87	ND
V-3	S/a	08-28-87	0.22000
V-3	S/a	09-25-87	ND
V-3	S/601/602+	01-08-88	ND
V-3	S/624+	03-09-88	—
V-3	AN/624	03-09-88	—
V-3	S/8240/8270	03-22-88	—
V-3	S/8240/8270	05-02-88	—
V-4	S/601	04-03-87	—
V-4	S/601	05-19-87	—
V-4	S/624	06-22-87	—
V-4	S/a	08-27-87	ND
V-4	S/601/602+	09-25-87	ND
V-4	ANR/601/602+	09-25-87	ND
V-4	S/a	09-25-87	ND
V-4	S/601/602	01-08-88	ND
V-4	DUP S/601/602	01-08-88	ND
V-4	ANA/601/8010	01-08-88	ND
V-4	S/8240	03-22-88	—
V-4	S/8240	03-22-88	—

TABLE A-1 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	XYLENE
V-5	A/624	05-05-87	—
V-5	S/624	06-22-87	—
V-5	S/a	08-27-87	ND
V-5	S/a	09-24-87	ND
V-5	S/601/602+	01-11-88	ND
V-5	S/8240	03-22-88	—
V-6	A/624	05-05-87	—
V-6	S/624	06-22-87	—
V-6	S/a	08-28-87	ND
V-6	S/a	09-24-87	ND
V-6	S/601/602+	01-11-88	ND
V-6	S/8240	03-23-88	—
V-7	A/624	05-05-87	—
V-7	S/624	06-22-87	—
V-7	S/a	08-28-87	ND
V-7	S/a	09-25-87	ND
V-7	S/601/602+	01-11-88	ND
V-7	S/8240	03-23-88	—
V-8	S/624	03-08-88	—
V-8	S/8010/8020	03-22-88	—
V-8	A/624	03-22-88	—
V-9	S/624	03-08-88	—
V-9	S/8010/8020	03-22-88	—
V-10	S/624	03-09-88	—
V-10	S/8010/8020	03-22-88	ND

S = Sequoia Analytical Laboratory
SEL = Scientific Environmental Laboratories
A = Anatec
ANR = Anresco
ANA = Anametrix
W = Wesco Laboratories
ND = Compound Not Detected
— = Compound Not Analyzed

601/602+ = EPA Methods 601 and 602, plus analysis for MEK and
a = Includes 601/602+, EPA Method 624

TABLE A-2: CHEMICAL ANALYSIS RESULTS B_1-AQUIFER GROUND WATER SAMPLES (ppm)

WELL NAME	METHOD/ LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	1,1-DCA
I-1	A/624	05-15-87	--	ND	ND	0.01100
I-1	S/624	06-03-87	--	ND	ND	0.00092
I-1	S/624	06-22-87	--	ND	ND	ND
I-1	S/a	08-27-87	ND	ND	ND	0.00230
I-1	S/a	09-25-87	ND	ND	ND	0.00300
I-1	S/601/602+	01-11-88	ND	--	ND	0.00120
I-1	S/8240	03-10-88	--	--	ND	0.00270
I-2	S/624 (CS)	08-28-87	ND	ND	ND	0.01430
I-2	S/a	09-24-87	ND	ND	ND	ND
I-2	S/601/602+	01-11-88	ND	--	ND	ND
I-2	S/8240	03-10-88	--	--	ND	0.00450
I-3	S/624 (CS)	08-28-87	ND	ND	ND	ND
I-3	S/a	09-24-87	ND	ND	ND	ND
I-3	S/601/602+	01-11-88	ND	--	ND	ND
I-3	S/8240	03-10-88	--	--	ND	ND

WELL NAME	METHOD/ LAB	SAMPLING DATE	1,1-DCE	1,2-DCA	TRANS 1,2-DCE	ETHYLBENZENE
I-1	A/624	05-15-87	ND	ND	ND	ND
I-1	S/624	06-03-87	ND	ND	ND	ND
I-1	S/624	06-22-87	ND	ND	ND	ND
I-1	S/a	08-27-87	ND	ND	ND	--
I-1	S/a	09-25-87	ND	ND	ND	--
I-1	S/601/602+	01-11-88	ND	ND	ND	ND
I-1	S/8240	03-10-88	ND	--	ND	--
I-2	S/624 (CS)	08-28-87	0.00718	ND	ND	--
I-2	S/a	09-24-87	ND	ND	ND	--
I-2	S/601/602+	01-11-88	ND	ND	ND	ND
I-2	S/8240	03-10-88	0.00240	--	ND	--
I-3	S/624 (CS)	08-28-87	ND	ND	ND	--
I-3	S/a	09-24-87	ND	ND	ND	--
I-3	S/601/602+	01-11-88	ND	ND	ND	ND
I-3	S/8240	03-10-88	ND	--	ND	--

TABLE A-2 (Continued)

WELL NAME	METHOD/ LAB	SAMPLING DATE	METHYLENE CHLORIDE	MEK	PCP	TETRACHLORO-ETHENE	TOLUENE
I-1	A/624	05-15-87	ND	ND	--	ND	ND
I-1	S/624	06-03-87	ND	--	--	ND	ND
I-1	S/624	06-23-87	0.00100	--	--	ND	ND
I-1	S/a	08-27-87	ND	ND	--	--	ND
I-1	S/a	09-25-87	ND	ND	--	--	ND
I-1	S/601/602+	01-11-88	ND	ND	--	ND	ND
I-1	S/8240	03-23-88	ND	--	--	--	--
I-2	S/624 (OS)	08-28-87	ND	ND	--	--	ND
I-2	S/a	09-24-87	ND	ND	--	--	ND
I-2	S/601/602+	01-11-88	ND	ND	--	ND	ND
I-2	S/8240	03-23-88	ND	--	--	--	--
I-3	S/624 (OS)	08-28-87	ND	ND	--	--	ND
I-3	S/a	09-24-87	ND	ND	--	--	ND
I-3	S/601/602+	01-11-88	ND	ND	--	ND	ND
I-3	S/8240	03-23-88	ND	--	--	--	--

WELL NAME	METHOD/ LAB	SAMPLING DATE	1,1,1-TCA	TCE	VINYL CHLORIDE	XYLENE
I-1	A/624	05-15-87	ND	ND	ND	ND
I-1	S/624	06-03-87	ND	ND	ND	--
I-1	S/624	06-23-87	ND	ND	ND	--
I-1	S/a	08-27-87	0.00190	ND	ND	ND
I-1	S/a	09-25-87	0.00280	ND	ND	ND
I-1	S/601/602+	01-11-88	0.00210	ND	ND	ND
I-1	S/8240	03-23-88	ND	--	--	--
I-2	S/624 (OS)	08-28-87	0.00660	ND	ND	ND
I-2	S/a	09-24-87	ND	ND	ND	ND
I-2	S/601/602+	01-11-88	ND	ND	ND	ND
I-2	S/8240	03-23-88	0.00320	--	--	--
I-3	S/624 (OS)	08-28-87	ND	ND	ND	ND
I-3	S/a	09-24-87	ND	ND	ND	ND
I-3	S/601/602+	01-11-88	ND	ND	ND	ND
I-3	S/8240	03-23-88	ND	--	--	--

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AN = Anresco Inc.
ANA = Anametrix
W = Westo Laboratories
ND = Compound Not Detected
-- = Compound Not Analyzed

601/602+ = EPA Methods 601 and 602, plus analysis for MEK and Xylenes
a = Includes 601/602+, EPA Method 604

TABLE A-3: CHEMICAL ANALYSIS RESULTS SURFACE WATER SAMPLES (mg/l

SAMPLE ID	LOCATION	METHOD LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	[illegible]	[illegible]
[illegible]	COLLECTION SUMP	S 8020 8020	08-26-87	ND	ND	ND	0.00500	ND
S-1	PONDED WATER FROM DRAINAGE SWALE	S 8020 8020	12-18-87	0.17000	ND	ND	0.05600	ND
S-1A	SAME AS S-1 ABOVE	S/8010/8020	01-04-88	ND	ND	ND	0.00993	ND
1-AP	ROOF DOWNSPOUT OUTFLOW	S/8010 8020	04-19-88	--	ND	ND	ND	ND
2-AP	DISCHARGE PIPE	S/8010/8020	04-19-88	--	ND	ND	0.00510	ND
3-AP	10' W. OF DISCHG. PIPE	S 8010 8020	04-19-88	--	ND	ND	0.00570	ND
4-AP	PONDED WATER DRAINAGE SWALE	S/8010 8020	04-19-88	--	ND	ND	0.00800	ND
5-AP	SAME AS 4-AP ABOVE	S/8010/8020	04-19-88	--	ND	ND	0.00700	ND
6-AP	SAME AS 4-AP ABOVE	S/8010/8020	04-19-88	--	ND	ND	0.00470	ND
7-AP	COLLECTION SUMP	S/8010/8020	04-19-88	--	ND	ND	ND	ND

TABLE A-3 (Continued)

SAMPLE ID	LOCATION	METHOD USE	SAMPLING DATE	[illegible]	TRANS 1,2-DICHLOROETHENE	ETHYLBENZENE	METHYLENE CHLORIDE	[illegible]
[illegible]	COLLECTION SUMP	[illegible]	[illegible]	ND	ND	ND	ND	ND
[illegible]	PONDED WATER FROM DRAINAGE SWALE	[illegible]	[illegible]	ND	ND	ND	[illegible]	ND
[illegible]	SAME AS [illegible] ABOVE	[illegible]	[illegible]	ND	ND	ND	[illegible]	[illegible]
1-AP	ROOF DOWNSPOUT OUTFLOW	S/8010/8020	04-19-88	ND	ND	ND	[illegible]	ND
2-AP	DISCHARGE PIPE	S/8010/8020	04-19-88	ND	ND	ND	0.07000	ND
3-AP	10 [illegible] OF DISCHG. PIPE	S/8010/8020	04-19-88	ND	ND	ND	0.35100	ND
4-AP	PONDED WATER DRAINAGE SWALE	S/8010/8020	04-19-88	ND	ND	ND	0.31500	ND
5-AP	SAME AS 4-AP ABOVE	S/8010/8020	04-19-88	ND	ND	ND	0.01500	ND
6-AP	SAME AS 4-AP ABOVE	S/8010/8020	04-19-88	ND	ND	ND	0.02100	ND
7-AP	COLLECTION SUMP	S/8010/8020	04-19-88	ND	ND	ND	ND	ND

TABLE A-3 (Continued)

SAMPLE NO.	LOCATION	[illegible]	SAMPLING DATE	[illegible]	TETRACHLORO-ETHENE	TOLUENE	[illegible]	[illegible]
[illegible]	COLLECTION SUMP	[illegible]	[illegible]	ND	ND	ND	[illegible]	ND
[illegible]	PONDED WATER FROM DRAINAGE SWALE	[illegible]	[illegible]	0.02000	ND	ND	[illegible]	ND
[illegible]	SAME AS [illegible] ABOVE	[illegible]	01-04-88	ND	ND	ND	[illegible]	ND
1-AP	ROOF DOWNSPOUT OUTFLOW	[illegible] 8010/8020	04-19-88	--	ND	ND	ND	ND
2-AP	DISCHARGE PIPE	[illegible] 8010/8020	04-19-88	--	ND	ND	0.04700	ND
3-AP	[illegible] DISCHARGE PIPE	[illegible] 8010/8020	04-19-88	--	ND	ND	[illegible]	ND
4-AP	PONDED WATER DRAINAGE SWALE	[illegible] 8010/8020	04-19-88	--	ND	ND	[illegible]	ND
5-AP	SAME AS 4-AP ABOVE	[illegible] 8010/8020	04-19-88	--	ND	ND	[illegible]	ND
6-AP	SAME AS 4-AP ABOVE	[illegible] 8010/8020	04-19-88	--	ND	ND	[illegible]	ND
7-AP	COLLECTION SUMP	[illegible] 8010/8020	04-19-88	--	ND	ND	ND	ND

TABLE A-3 (Continued)

SAMPLE ID	LOCATION	METHOD USED	SAMPLING DATE	VINYL CHLORIDE	XYLENE
[illegible]	COLLECTION SUMP	S 601 602	03-03-87	ND	[illegible]
S-1	PONDED WATER FROM DRAINAGE SWALE	S 601 602	03-03-87	ND	0.00?50
S-1A	SAME AS S-1 ABOVE	S 601/602	01-04-88	ND	ND
1-AP	PUMP DISCHARGE OUTFALL	S 8010 8020	04-19-88	ND	ND
2-AP	DISCHARGE PIPE	S/8010/8020	04-19-88	ND	ND
3-AP	END OF DISCH. PIPE	S/8010/8020	04-19-88	ND	ND
4-AP	PONDED WATER DRAINAGE SWALE	S/8010/8020	04-19-88	ND	ND
5-AP	SAME AS 4-AP ABOVE	S/8010 8020	04-19-88	ND	ND
6-AP	SAME AS 4-AP ABOVE	S/8010/8020	04-19-88	ND	ND
7-AP	COLLECTION SUMP	S/8010/8020	04-19-88	ND	ND

S = Sequoia Analytical Laboratory
SEL = Scientific Environmental Laboratories
A = Anatec
AI = Anresco Inc.
ANA = Anametrix
W = Wesco Laboratories
ND = Compound Not Detected
-- = Compound Not Analyzed

601/602+ = EPA Methods 601 and 602, plus analysis for MEK and Xylenes
a = Includes 601/602+, EPA Method 604

TABLE A-4. CHEMICAL ANALYSIS RESULTS SOIL SAMPLES (mg/kg)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	1,1-DCA	1,1-DCE
SO, 8-15' (V-2)	A/T	08-27-86	<0.15000	—	—	—	—
SO, 28-35' (V-2)	A/T	08-27-86	<0.10000	—	—	—	—
SO, 5,10' (V-3)	A/T	11-25-86	1.90000	—	—	—	—
SO, 13.15' (V-3)	A/T	11-25-86	<1.00000	—	—	—	—
SO, 3s' (V-3)	A/T	11-05-86	1.00000	—	—	—	—
S4 (V-4) 14 - 15.5	S/8010	04-02-87	—	—	<0.05000	<0.05000	<0.05000
S5 (V-4) 20 - 21.5	S/8010	04-02-87	—	—	<0.05000	0.05000	<0.05000
S9 (V-4) 38.5 - 40'	S/8010	04-02-87	—	—	<0.05000	<0.05000	<0.05000
DRAINAGE SWALE BORINGS							
B-1,R-2	S/8010	06-18-87	—	ND	—	ND	ND
B-1,R-6	S/8010	06-18-87	—	ND	—	ND	ND
B-2,R-1	S/8010	06-18-87	ND	ND	—	ND	ND
B-2,R-2	S/8010	06-18-87	—	ND	—	ND	ND
B-2,R-4	S/8010	06-18-87	—	ND	—	ND	ND
B-2,R-6	S/8010	06-18-87	ND	ND	—	ND	ND
B-3,R-1	S/8010	06-18-87	ND	ND	—	ND	ND
B-3,R-4	S/8010	06-18-87	—	ND	—	ND	ND
B-3,R-6	S/8010	06-18-87	ND	ND	—	ND	ND
B-4,R-1	S/8010	06-18-87	ND	ND	—	ND	ND
B-4,R-3	S/8010	06-18-87	—	ND	—	ND	ND
B-4,R-4	S/8010	06-18-87	—	ND	—	ND	ND
B-4,R-5	S/8010	06-18-87	—	ND	—	ND	ND
B-4,R-6	S/8010	06-18-87	ND	ND	—	ND	ND
B-5,R-1	S/8010	06-18-87	—	ND	—	ND	ND
B-5,R-3	S/8010	06-18-87	ND	ND	—	ND	ND
B-5,R-4	S/8010	06-18-87	ND	ND	—	ND	ND
B-5,R-5	S/8010	06-18-87	—	ND	—	ND	ND
B-5,R-6	S/8010	06-18-87	ND	0.14000	—	ND	ND
B-6,R-1	S/8010	06-18-87	—	ND	—	ND	ND
B-6,R-3	S/8010	06-18-87	ND	ND	—	ND	ND
B-6,R-4	S/8010	06-18-87	ND	ND	—	ND	ND
B-6,R-5	S/8010	06-18-87	—	ND	—	ND	ND
B-6,R-6	S/8010	06-18-87	ND	ND	—	ND	ND
B-7,R-1	S/8010	06-18-87	—	ND	—	ND	ND
B-7,R-2	S/8010	06-18-87	—	ND	—	ND	ND
B-7,R-3	S/8010	06-18-87	ND	ND	—	ND	ND
B-7,R-4	S/8010	06-18-87	ND	ND	—	ND	ND
B-7,R-5	S/8010	06-18-87	—	ND	—	ND	ND
B-7,R-6	S/8010	06-18-87	ND	ND	—	ND	ND
B-8,R-2	S/8010	06-18-87	278.00000	ND	—	27.00000	13.00000
B-8,R-3	S/8010	06-18-87	—	—	—	0.07400	ND
B-8,R-4	S/8010	06-18-87	15.00000	—	—	0.95000	ND
B-8,R-5	S/8010	06-18-87	—	—	—	0.02000	ND
B-8,R-6	S/8010	06-18-87	10.00000	—	—	0.75000	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	1,2-DCA	TRANS 1,2-DCE	ETHYLBENZENE	METHYLENE CHLORIDE	MEK
SD, 0-15'(V-2)	W/?	08-27-86	--	--	--	<2.25000	<0.10000
SD, 20-25'(V-2)	W/?	08-27-86	--	--	--	<2.05000	<0.10000
SD, 5,10'(V-3)	W/?	11-05-86	--	--	--	<0.02500	<1.20000
SD, 15,19'(V-3)	W/?	11-05-86	--	--	--	<0.20500	<1.20000
SD, 20'(V-3)	W/?	11-05-86	--	--	--	<2.22500	<1.20000
S4 (V-4) 14 - 15.5'	S/8010	04-02-87	--	--	--	0.25000	--
S5 (V-4) 20 - 21.5'	S/8010	04-02-87	--	--	--	3.50000	--
S9 (V-4) 38.5 - 40'	S/8010	04-02-87	--	--	--	<0.25000	--
DRAINAGE SWALE BORINGS							
B-1,R-2	S/8010	06-10-87	ND	ND	--	0.41000	ND
B-1,R-6	S/8010	06-10-87	ND	ND	--	ND	ND
B-2,R-1	S/8010	06-10-87	ND	ND	--	1.10000	ND
B-2,R-2	S/8010	06-10-87	ND	ND	--	ND	ND
B-2,R-4	S/8010	06-10-87	ND	ND	--	ND	ND
B-2,R-6	S/8010	06-10-87	ND	ND	--	1.80000	ND
B-3,R-1	S/8010	06-10-87	ND	ND	--	2.40000	ND
B-3,R-4	S/8010	06-10-87	ND	ND	--	ND	ND
B-3,R-6	S/8010	06-10-87	ND	ND	--	0.35	ND
B-4,R-1	S/8010	06-10-87	ND	ND	--	1.10000	ND
B-4,R-3	S/8010	06-10-87	ND	ND	--	ND	ND
B-4,R-4	S/8010	06-10-87	ND	ND	--	0.19000	ND
B-4,R-5	S/8010	06-10-87	ND	ND	--	ND	ND
B-4,R-6	S/8010	06-10-87	ND	ND	--	0.10000	ND
B-5,R-1	S/8010	06-10-87	ND	ND	--	ND	ND
B-5,R-3	S/8010	06-10-87	ND	ND	--	0.77000	ND
B-5,R-4	S/8010	06-10-87	ND	ND	--	ND	ND
B-5,R-5	S/8010	06-10-87	ND	ND	--	ND	ND
B-5,R-6	S/8010	06-10-87	ND	ND	--	ND	ND
B-6,R-1	S/8010	06-10-87	ND	ND	--	2.10000	ND
B-6,R-3	S/8010	06-10-87	ND	ND	--	0.99000	ND
B-6,R-4	S/8010	06-10-87	ND	ND	--	ND	ND
B-6,R-5	S/8010	06-10-87	ND	ND	--	0.77000	ND
B-6,R-6	S/8010	06-10-87	ND	ND	--	1.60000	ND
B-7,R-1	S/8010	06-10-87	ND	ND	--	0.25000	ND
B-7,R-2	S/8010	06-10-87	ND	ND	--	ND	ND
B-7,R-3	S/8010	06-10-87	ND	ND	--	ND	ND
B-7,R-4	S/8010	06-10-87	ND	ND	--	ND	ND
B-7,R-5	S/8010	06-10-87	ND	ND	--	ND	ND
B-7,R-6	S/8010	06-10-87	ND	ND	--	ND	ND
B-8,R-2	S/8010	06-10-87	3.90000	4.30000	170.00000	3,400.30000	ND
B-8,R-3	S/8010	06-10-87	ND	ND	--	2.40000	ND
B-8,R-4	S/8010	06-10-87	ND	ND	--	71.00000	ND
B-8,R-5	S/8010	06-10-87	ND	ND	--	0.79000	ND
B-8,R-6	S/8010	06-10-87	ND	ND	--	15.00000	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	PCP	TETRACHLORO-ETHENE	TOLUENE	1,1,1-TCA	TCE
SO, 0-15' (V-2)	A/P	08-27-86	0.20000	—	--	<0.25000	--
SO, 20-35' (V-2)	A/P	08-27-86	0.00660	—	—	<0.25000	—
SO, 5.12' (V-3)	W/P	11-25-86	—	—	--	<0.02500	—
SO, 10.15' (V-3)	W/P	11-25-86	—	—	—	<0.02500	—
SO, 36' (V-3)	W/P	11-25-86	—	—	--	<0.02500	--
S4 (V-4) 14 - 15.5'	S/8010	04-02-87	—	—	—	0.05700	<0.05000
S5 (V-4) 20 - 21.5'	S/8010	04-02-87	—	—	—	0.34000	<0.25000
S9 (V-4) 38.5 - 40'	S/8010	04-02-87	—	—	—	<0.25000	<0.05000
DRAINAGE SWALE BORINGS							
B-1,R-2	S/8010	06-10-87	—	ND	ND	0.29000	ND
B-1,R-6	S/8010	06-10-87	—	ND	ND	ND	ND
B-2,R-1	S/8010	06-10-87	—	ND	ND	ND	ND
B-2,R-2	S/8010	06-10-87	—	ND	ND	ND	ND
B-2,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-2,R-6	S/8010	06-10-87	—	ND	ND	0.11000	ND
B-3,R-1	S/8010	06-10-87	—	ND	ND	0.56000	ND
B-3,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-3,R-6	S/8010	06-10-87	—	ND	ND	0.15000	ND
B-4,R-1	S/8010	06-10-87	—	ND	ND	ND	ND
B-4,R-3	S/8010	06-10-87	—	ND	ND	ND	ND
B-4,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-4,R-5	S/8010	06-10-87	—	ND	ND	ND	ND
B-4,R-6	S/8010	06-10-87	—	ND	ND	ND	ND
B-5,R-1	S/8010	06-10-87	—	ND	ND	ND	ND
B-5,R-3	S/8010	06-10-87	—	ND	ND	ND	ND
B-5,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-5,R-5	S/8010	06-10-87	—	ND	ND	ND	ND
B-5,R-6	S/8010	06-10-87	—	ND	ND	ND	ND
B-6,R-1	S/8010	06-10-87	—	ND	ND	ND	ND
B-6,R-3	S/8010	06-10-87	—	ND	ND	ND	ND
B-6,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-6,R-5	S/8010	06-10-87	—	ND	ND	ND	ND
B-6,R-6	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-1	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-2	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-3	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-4	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-5	S/8010	06-10-87	—	ND	ND	ND	ND
B-7,R-6	S/8010	06-10-87	—	ND	ND	ND	ND
B-8,R-2	S/8010	06-10-87	—	16.00000	1,700.00000	ND	490.00000
B-8,R-3	S/8010	06-10-87	—	0.22670	1400.00000	1.59000	ND
B-8,R-4	S/8010	06-10-87	—	3.01200	61.00000	22.00000	0.55000
B-8,R-5	S/8010	06-10-87	—	ND	ND	2.30000	0.25000
B-8,R-6	S/8010	06-10-87	--	ND	ND	0.21600	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	VINYL CHLORIDE	XYLENE
SD, 8-15 (V-2)	A/T	08-27-86	—	—
SD, 20-25 (V-2)	A/T	08-27-86	—	—
SD, 5,10' (V-3)	W/T	11-25-86	—	—
SD, 10,15' (V-3)	W/T	11-25-86	—	—
SD, 30' (V-3)	W/T	11-25-86	—	—
B4 (V-4) 14 - 15.5'	S/8010	04-02-87	<0.05000	—
B5 (V-4) 20 - 21.5'	S/8010	04-02-87	<0.05000	—
B7 (V-4) 38.5 - 40'	S/8010	04-02-87	<0.05000	—
DRAINAGE SWALE BORINGS				
B-1,R-2	S/8010	06-10-87	—	ND
B-1,R-6	S/8010	06-10-87	—	ND
B-2,R-1	S/8010	06-10-87	—	ND
B-2,R-2	S/8010	06-10-87	—	ND
B-2,R-4	S/8010	06-10-87	—	ND
B-2,R-6	S/8010	06-10-87	—	ND
B-3,R-1	S/8010	06-10-87	—	ND
B-3,R-4	S/8010	06-10-87	—	ND
B-3,R-6	S/8010	06-10-87	—	ND
B-4,R-1	S/8010	06-10-87	—	ND
B-4,R-3	S/8010	06-10-87	—	ND
B-4,R-4	S/8010	06-10-87	—	ND
B-4,R-5	S/8010	06-10-87	—	ND
B-4,R-6	S/8010	06-10-87	—	ND
B-5,R-1	S/8010	06-10-87	—	ND
B-5,R-3	S/8010	06-10-87	—	ND
B-5,R-4	S/8010	06-10-87	—	ND
B-5,R-5	S/8010	06-10-87	—	ND
B-5,R-6	S/8010	06-10-87	—	ND
B-6,R-1	S/8010	06-10-87	—	ND
B-6,R-3	S/8010	06-10-87	—	ND
B-6,R-4	S/8010	06-10-87	—	ND
B-6,R-5	S/8010	06-10-87	—	ND
B-6,R-6	S/8010	06-10-87	—	ND
B-7,R-1	S/8010	06-10-87	—	ND
B-7,R-2	S/8010	06-10-87	—	ND
B-7,R-3	S/8010	06-10-87	—	ND
B-7,R-4	S/8010	06-10-87	—	ND
B-7,R-5	S/8010	06-10-87	—	ND
B-7,R-6	S/8010	06-10-87	—	ND
B-8,R-2	S/8010	06-10-87	—	ND
B-8,R-3	S/8010	06-10-87	—	91.00000
B-8,R-4	S/8010	06-10-87	—	1.70000
B-8,R-5	S/8010	06-10-87	—	ND
B-8,R-6	S/8010	06-10-87	—	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	ACETONE	BENZENE	CHLOROETHANE	1,1-DCA	1,1-DCE
WA-1 BELOW DIESEL TANK	S/8020/8020	10-30-87	--	3.00000	--	--	--
WA-2 EXCAVATION SIDEWALL	S/8020/8020	10-30-87	--	0.39000	--	--	--
R-1 PARKING LOT DRY WELL	S/8010	04-25-88	--	--	ND	ND	ND
R-2 EAST DRY WELL	S/8010	04-25-88	--	--	ND	ND	ND
R-3 WEST DRY WELL	S/8010/8020	04-25-88	--	ND	ND	ND	ND
DRAINAGE SWALE BORINGS							
B-9,R-1	S/8240/8240	04-05-88	16.30000	ND	ND	0.15000	ND
B-9,R-2	S/8240/8240	04-05-88	25.30000	ND	ND	2.20000	ND
B-9,R-3	S/8240/8240	04-05-88	1.50000	ND	ND	0.66000	ND
B-9,R-4	S/8240/8240	04-05-88	2.70000	ND	ND	0.23000	ND
B-9,R-5	S/8240/8240	04-05-88	12.00000	ND	ND	ND	ND
B-9,R-6	S/8240/8240	04-05-88	4.80000	ND	ND	ND	ND
B-10,R-7	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-8	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-9	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-10	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-11	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-12	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-13	S/8240/8240	04-05-88	2.50000	ND	ND	ND	ND
B-11,R-14	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-15	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-16	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-17	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-18	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-19	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-20	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-21	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
SB-2,R-1	S/8240/8240	04-05-88	0.33000	ND	ND	2.60000	ND
SB-3,R-1	S/8240/8240	04-05-88	91.20000	ND	ND	47.00000	ND
SB-4,R-1	S/8240/8240	04-05-88	23.80000	ND	ND	7.30000	ND
SB-7,R-1	S/8240/8240	04-05-88	ND	ND	ND	0.44000	ND
SB-1	S/5030/8240	05-24-88	1.10000	ND	ND	0.54000	ND
SB-5	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-6	S/5030/8240	05-24-88	17.00000	ND	ND	ND	ND
SB-8	S/5030/8240	05-24-88	1.20000	ND	ND	ND	ND
SB-9	S/5030/8240	05-24-88	49.00000	ND	ND	0.61000	ND
SB-10	S/5030/8240	05-24-88	100.00000	ND	ND	0.56000	ND
SB-11	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-12	S/5030/8240	05-24-88	14.30000	ND	ND	ND	ND
SB-13	S/5030/8240	05-24-88	1.20000	ND	ND	ND	ND
SB-14	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-15	S/5030/8240	05-24-88	ND	ND	ND	ND	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/ LAB	SAMPLING DATE	1,2-DCA	TRANS 1,2-DCE	ETHYLBENZENE	METHYLENE CHLORIDE	MEK
EXCAVATION SIDEWALL	S/8020/8020	12-02-87	—	—	--	—	--
R-1 PARKING LOT DRY WELL	S/8010	04-25-88	ND	ND	--	ND	ND
R-2 EAST DRY WELL	S/8010	04-25-88	ND	ND	—	ND	ND
R-3 WEST DRY WELL	S/8010/8020	04-25-88	ND	ND	ND	ND	ND
DRAINAGE SWALE BORINGS							
B-9,R-1	S/8240/8040	04-05-88	ND	ND	ND	9.3	—
B-9,R-2	S/8240/8240	04-05-88	ND	ND	3.00000	42.00000	—
B-9,R-3	S/8240/8240	04-05-88	ND	ND	4.20000	21.00000	—
B-9,R-4	S/8240/8240	04-05-88	ND	ND	ND	7.40000	—
B-9,R-5	S/8240/8240	04-05-88	ND	ND	ND	16.00000	—
B-9,R-6	S/8240/8240	04-05-88	ND	ND	ND	15.00000	—
B-10,R-7	S/8240/8240	04-05-88	ND	ND	0.22000	ND	—
B-10,R-8	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-10,R-9	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-10,R-10	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-10,R-11	S/8240/8240	04-05-88	ND	ND	ND	ND	--
B-10,R-12	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-11,R-13	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-11,R-14	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-11,R-15	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-11,R-16	S/8240/8240	04-05-88	ND	ND	ND	ND	--
B-11,R-17	S/8240/8040	04-05-88	ND	ND	ND	ND	--
B-11,R-18	S/8240/8240	04-05-88	ND	ND	ND	ND	--
B-12,R-19	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-12,R-20	S/8240/8240	04-05-88	ND	ND	ND	ND	—
B-12,R-21	S/8240/8240	04-05-88	ND	ND	ND	ND	—
SB-2,R-1	S/8240/8240	04-05-88	ND	ND	ND	1.70000	—
SB-3,R-1	S/8240/8240	04-05-88	ND	ND	ND	212.00000	--
SB-4,R-1	S/8240/8240	04-05-88	ND	ND	2.10000	64.00000	—
SB-7,R-1	S/8240/8240	04-05-88	ND	ND	ND	ND	—
SB-1	S/8020/8240	05-24-88	ND	ND	ND	1.30000	ND
SB-5	S/8020/8240	05-24-88	ND	ND	ND	ND	ND
SB-6	S/8020/8240	05-24-88	ND	ND	0.09500	ND	ND
SB-8	S/8020/8240	05-24-88	ND	ND	ND	ND	ND
SB-9	S/8020/8240	05-24-88	ND	ND	1.20000	6.30000	1.30000
SB-10	S/8020/8240	05-24-88	ND	ND	0.50000	6.00000	1.90000
SB-11	S/8020/8240	05-24-88	ND	ND	ND	ND	ND
SB-12	S/8020/8240	05-24-88	ND	ND	0.33000	0.65000	1.30000
SB-13	S/8020/8240	05-24-88	ND	ND	0.20000	ND	ND
SB-14	S/8020/8240	05-24-88	ND	ND	ND	ND	ND
SB-15	S/8020/8240	05-24-88	ND	ND	ND	ND	ND

TABLE A-4 (Continued)

SAMPLE ID	METHOD/LAB	SAMPLING DATE	PCP	TETRACHLORO-ETHENE	TOLUENE	1,1,1-TCA	TCE
BELOW DIESEL TANK	S/5020/5020	10-20-87	—	—	0.35000	—	—
WA-1 EXCAVATION SIDEWALL	S/5020/5020	10-20-87	—	—	0.77000	—	—
R-1 PARKING LOT DRY WELL	S/8010	04-25-88	--	ND	--	ND	ND
R-2 EAST DRY WELL	S/8010	04-25-88	—	ND	—	ND	ND
R-3 WEST DRY WELL	S/8010/5020	04-25-88	—	ND	0.39500	ND	ND
DRAINAGE SWALE BORINGS							
B-9,R-1	S/8240/8240	04-05-88	ND	ND	2.30000	0.34000	ND
B-9,R-2	S/8240/8240	04-05-88	ND	0.87000	32.00000	32.80000	1.40000
B-9,R-3	S/8240/8240	04-05-88	ND	1.30000	41.80000	29.80000	1.50000
B-9,R-4	S/8240/8240	04-05-88	ND	ND	0.27000	0.29000	ND
B-9,R-5	S/8240/8240	04-05-88	ND	ND	0.42000	ND	ND
B-9,R-6	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-7	S/8240/8240	04-05-88	ND	ND	0.74000	ND	ND
B-10,R-8	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-9	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-10	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-11	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-10,R-12	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-13	S/8240/8240	04-05-88	ND	ND	0.13000	ND	ND
B-11,R-14	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-15	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-16	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-17	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-11,R-18	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-19	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-20	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
B-12,R-21	S/8240/8240	04-05-88	ND	ND	ND	ND	ND
SB-2,R-1	S/8240/8240	04-05-88	ND	ND	0.30000	2.62000	ND
SB-3,R-1	S/8240/8240	04-05-88	ND	ND	38.00000	47.00000	ND
SB-4,R-1	S/8240/8240	04-05-88	ND	17.00000	17.00000	7.00000	2.30000
SB-7,R-1	S/8240/8240	04-05-88	ND	0.21000	[illegible]	2.44000	ND
SB-1	S/5030/8240	05-24-88	ND	ND	ND	1.10000	ND
SB-5	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-6	S/5030/8240	05-24-88	ND	ND	1.46000	ND	ND
SB-8	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-9	S/5030/8240	05-24-88	ND	0.24000	[illegible]	[illegible]	ND
SB-10	S/5030/8240	05-24-88	ND	ND	0.30000	ND	ND
SB-11	S/5030/8240	05-24-88	ND	ND	ND	ND	ND
SB-12	S/5030/8240	05-24-88	ND	ND	1.22700	[illegible]	[illegible]
SB-13	S/5030/8240	05-24-88	ND	ND	1.20000	[illegible]	[illegible]
SB-14	S/5030/8240	05-24-88	ND	ND	ND	[illegible]	[illegible]
SB-15	S/5030/8240	05-24-88	ND	[illegible]	ND	[illegible]	[illegible]

TABLE A-4 (Continued)

SAMPLE ID	METHOD USED	SAMPLING DATE	VINYL CHLORIDE	XYLENE
BELOW DIESEL TANK	S/8020 8020	12-02-87	--	[illegible].60000
SS-1 EXCAVATION SIDEWALL	S 8010/8020	12-02-87	--	[illegible].50000
P-1 PARKING LOT DRY WELL	S 8010	04-25-88	ND	ND
P-2 EAST DRY WELL	S/8010	04-25-88	ND	ND
P-3 WEST DRY WELL	S 8010/8020	04-25-88	ND	0.52050
DRAINAGE SWALE BORINGS				
B-9,R-1	S/8240/8040	04-05-88	ND	0.45000
B-9,R-2	S/8240/8040	04-05-88	ND	10.00000
B-9,R-3	S/8240/8040	04-05-88	ND	27.00000
B-9,R-4	S/8240/8040	04-05-88	ND	ND
B-9,R-5	S/8240/8040	04-05-88	ND	ND
B-9,R-6	S/8240/8040	04-05-88	ND	ND
B-10,R-7	S/8240/8040	04-05-88	ND	2.10000
B-10,R-8	S/8240/8040	04-05-88	ND	ND
B-10,R-9	S/8240/8040	04-05-88	ND	ND
B-10,R-10	S/8240/8040	04-05-88	ND	ND
B-10,R-11	S/8240/8040	04-05-88	ND	ND
B-10,R-12	S/8240/8040	04-05-88	ND	ND
B-11,R-13	S/8240/8040	04-05-88	ND	0.27
B-11,R-14	S/8240/8040	04-05-88	ND	ND
B-11,R-15	S/8240/8040	04-05-88	ND	ND
B-11,R-16	S/8240/8040	04-05-88	ND	ND
B-11,R-17	S/8240/8040	04-05-88	ND	ND
B-11,R-18	S/8240/8040	04-05-88	ND	ND
B-12,R-19	S/8240/8040	04-05-88	ND	ND
B-12,R-20	S/8240/8040	04-05-88	ND	0.76000
B-12,R-21	S/8240/8040	04-05-88	ND	0.17000
SB-2,R-1	S/8240/8040	04-05-88	ND	ND
SB-3,R-1	S/8240/8040	04-05-88	ND	27.00000
SB-4,R-1	S/8240/8040	04-05-88	ND	210.00000
SB-7,R-1	S/8240/8040	04-05-88	ND	0.31000
SB-1	S/5030/8240	05-24-88	ND	ND
SB-5	S/5030/8240	05-24-88	ND	ND
SB-6	S/5030/8240	05-24-88	ND	0.70000
SB-8	S/5030/8240	05-24-88	ND	ND
SB-9	S/5030/8240	05-24-88	ND	11.00000
SB-10	S/5030/8240	05-24-88	ND	4.50000
SB-11	S/5030/8240	05-24-88	ND	ND
SB-12	S/5030/8240	05-24-88	ND	2.20000
SB-13	S/5030/8240	05-24-88	ND	1.90000
SB-14	S/5030/8240	05-24-88	ND	ND
SB-15	S/5030/8240	05-24-88	ND	ND

S = Sequoia Analytical Laboratory
SEL = Scientific Environmental Laboratories
A = Anatec
ANA = Anametrix
W = Wesco Laboratories
ND = Compound Not Detected
-- = Compound Not Analyzed

601/602+ = EPA Methods 601 and 602, plus analysis for MEK and
a = Includes 601/602+, EPA Method 504

INDICATOR CONTAMINANT WORKSHEETS AND TABLES

TABLE B-1

CONSTITUENTS IDENTIFIED DURING REMEDIAL INVESTIGATION

Contaminants	Detected Infrequently And/Or Very Low Concentrations
(c)1,2-Dichloroethene	
(t)1,2-Dichloroethene	
1,1,1-Trichloroethane	
1,1-Dichloroethane	
1,1-Dichloroethene	
1,2-Dichloroethane	
1-Methoxy, 2-Propanone Phenol	X
Acetone	
Benzene	
Bromodichloromethane	X
Carbon Tetrachloride	X
Chlorobenzene	X
Chloroethane	
Chloroform	X
Ethanol	X
Ethylbenzene	
Isopropanol	X
Methanol	X
Methyl Ethyl Ketone	
Methylene Chloride	
Miscellaneous Hydrocarbons	X
Pentachlorophenol	
Phenol	X
Tetrachloroethylene	
Toluene	
TPH as Diesel	X
TPH as Kerosene	X
TPH as Paint Thinner	X
Trichloroethene	
Vinyl Chloride	
Xylenes	

TABLE B-2: CONCENTRATIONS OF CONTAMINANTS IDENTIFIED DURING REMEDIAL INVESTIGATION

	GROUND WATER						SURFACE WATER					SOILS					
Contaminant	Observed Concentration			Percent Detected	Maximum(1) Contaminant Level	State(2) Action Levels	Observed Concentration			Maximum Contaminant Level	State Action Levels	Observed Concentration			Percent Detected	STLC(3)	TTLC(4)
	Minimum mg/l	Maximum mg/l	Mean mg/l	%	mg/l	mg/l	Minimum mg/l	Maximum mg/l	Mean mg/l	mg/l	mg/l	Minimum mg/kg	Maximum mg/kg	Mean mg/kg	%	mg/l	mg/kg
Acetone	3.00E-03	1.80E+00	1.03E-01	17.07	-(5)	-	ND(6)	2.90E-01	2.90E-01	-	-	1.20E+00	2.70E+02	9.28E+00	37.29	-	-
Benzene	1.90E-03	2.00E-02	6.43E-03	7.50	5.0E-03	7.0E-04	ND	ND	ND	5.00E-03	7.00E-04	3.90E-01	3.00E+00	5.47E-01	4.29	-	-
Chloroethane	3.10E-03	5.00E-01	4.49E-02	32.00	-	1.0E-04	ND	ND	ND	-	1.00E-04	ND	ND	ND	ND	-	-
1,1-DCA	6.90E-04	2.20E+00	5.36E-02	66.23	-	2.0E-02	3.00E-03	5.60E-02	7.89E-03	-	2.00E-02	1.60E-01	3.40E+01	8.83E-01	22.08	-	-
1,1-DCE	5.00E-04	5.00E-01	1.35E-02	44.00	7.0E-03 *	6.0E-03	ND	ND	ND	7.00E-03 *	6.00E-03	ND	1.30E+01	1.30E+01	1.30	-	-
1,2-DCA	1.00E-03	2.58E+00	2.57E-02	11.11	5.0E-03 *	1.0E-03	ND	ND	ND	5.00E-03 *	1.00E-03	ND	3.90E+00	3.90E+00	1.35	-	-
1,2-DCE	1.40E-03	1.30E-02	4.71E-03	19.40	-	1.6E-03	ND	ND	ND	-	1.60E-03	ND	4.80E+00	4.80E+00	1.35	-	-
Ethylbenzene	7.60E-03	5.70E-02	1.73E-02	10.34	-	6.8E-01	ND	ND	ND	-	6.80E-01	9.80E-02	1.70E+01	1.15E+00	26.32	-	-
Methylene Chloride	8.00E-04	1.42E+02	2.84E-01	41.46	-	4.0E-02	1.40E-02	1.30E+00	4.68E-02	-	4.00E-02	1.90E-01	3.40E+03	3.64E+00	41.46	-	-
MEK	2.10E-03	1.00E+00	2.39E-02	17.39	-	3.0E-02	ND	ND	ND	-	3.00E-02	1.30E+00	1.90E+00	1.64E+00	5.56	-	-
PCP	2.00E-04	5.00E-02	1.22E-03	45.45	-	3.0E-02	ND	2.00E-01	2.00E-01	-	3.00E-02	8.60E-03	2.00E-01	4.15E-02	5.26	-	-
Tetrachloroethylene	6.00E-03	8.00E-03	6.60E-03	9.68	-	4.0E-03	ND	ND	ND	-	4.00E-03	6.70E-03	1.70E+01	6.51E-01	10.81	-	-
Toluene	3.00E-03	3.60E-01	3.35E-02	17.86	-	1.0E-01	ND	ND	ND	-	1.00E-01	9.80E-02	1.70E+03	3.67E+00	29.73	-	-
1,1-TCA	5.00E-04	2.04E+00	3.39E-02	63.64	2.0E-01 *	2.0E-01	1.30E-02	7.00E-01	4.25E-02	2.00E-01 *	2.00E-01	5.70E-02	4.70E+01	1.07E+00	24.39	-	-
TCE	5.00E-04	5.00E-01	8.93E-03	11.94	5.0E-03 *	5.0E-03	ND	ND	ND	5.00E-03 *	5.00E-03	8.80E-02	4.90E+02	1.87E+00	7.79	2.04E-01	2.04E+03
Vinyl Chloride	6.00E-04	5.00E-01	4.16E-03	19.70	1.0E-03 *	2.0E-03	ND	ND	ND	1.00E-03 *	2.00E-03	ND	ND	ND	ND	-	1.00E+01
Xylene	8.00E-03	6.00E-02	2.63E-02	17.07	-	6.2E-01	ND	9.80E-03	9.80E-03	-	6.20E-01	1.70E-01	2.10E+02	3.43E+00	26.32	-	-

1. Maximum Contaminant Level set By Federal Safe Drinking Water Act (40 CFR 141.11(b)).
2. California State Action Levels, 1987.
3. Soluable Threshold Limit Concentrations, California Department of Health Services, 1987.
4. Total Threshold Limit Concentrations, California Department of Health Services, 1987.
5. Not applicable.
6. Not detected.
7. *Proposed value.

TABLE B-3
INDICATOR CONTAMINANT SELECTION TOXICITY IDENTIFICATION

Contaminant	Toxicologic Class	Rating Value[4] EPA Category[5]	WT[6] l/mg	ST[7] kg/mg
Acetone	NC[1]	5	1.67E-02	8.36E-07
Benzene	PC[2]	A	7.71E-03	3.86E-07
	NC	5	1.17E-01	5.85E-06
Chloroethane	NA[3]	NA	NA	NA
1,1-DCA	NC	7	2.58E-02	1.29E-06
1,1-DCE	PC	C	1.23E-01	6.14E-06
	NC	7	3.71E-01	1.86E-05
1,2-DCA	PC	B2	5.86E-02	2.93E-01
	NC	10	1.76E-02	8.80E-07
1,2-DCE	NC	5	5.29E-02	2.65E-06
Ethylbenzene	NC	4	1.10E-02	5.52E-07
Methylene Chloride	PC	B2	NA	NA
	NC	10	9.05E-02	4.52E-06
MEK	NC	10	7.75E-03	3.87E-07
PCP	PC	B2[8]	NA	NA
	NC	8	2.70E-01	1.30E-05
Tetrachlorethene	PC	B2	8.86E-03	4.43E-07
	NC	7	9.62E-03	4.81E-07
Toluene	NC	7	5.20E-03	2.60E-07
1,1,1-TCA	NC	2	7.33E-04	3.67E-08
TCE	PC	B2	4.29E-03	2.14E-07
	NC	5	1.05E+00	5.26E-02
Vinyl Chloride	PC	A	4.29E-03	2.14E-07
	NC	10	8.77E-02	4.39E-06
Xylene	NC	10	4.39E-03	2.20E-07

1. Potential carcinogen.
2. Non-carcinogen.
3. Not applicable.
4. Rating value is for severity of effect for non-carcinogens, range 1 (low) to 10 (high).
5. EPA Weight of evidence:
   - A - Human carcinogen. Sufficient evidence from epidemiologic studies to support a casual association between exposure and cancer.
   - B2 - Probable human carcinogen: sufficient evidence of carcinogenicity in animals, inadequate evidence of carcinogenicity in humans.
   - C - Possible human carcinogen: limited evidence of carcinogenicity in animals.
   - D - Not Classified: inadequate evidence of carcinogenicity in animals.
6. Toxicity constant for water.
7. Toxicity constant for soil.
8. EPA has tentatively classified PCP as a B2 based on the results of the NTP (1988) study.

Source: Superfund Public Health Evaluation Manual (USEPA 1986).
Public Health Risk Evaluation Database (USEPA 1988).

TABLE B-4

INDICATOR CONTAMINANT SELECTION

IDENTIFIED CONTAMINANTS WITH LIMITED TOXICOLOGICAL DATA

Contaminant	Media Observed
Chloroethane	Ground Water

TABLE B-5
INDICATOR CONTAMINANT SELECTION
CARCINOGEN RANKING

Contaminant	Ground Water CT[1] Maximum	Ground Water CT[1] Representative	Soil CT[2] Maximum	Soil CT[2] Representative	Indicator Score Value Maximum	Indicator Score Value Representative	Tentative Rank Maximum	Tentative Rank Representative
1,1-DCE	6.15E-02	1.66E-03	8.00E-05	8.00E-05*	6.16E-02	1.74E-03	3	2
1,2-DCA	1.51E-01	1.51E-03	1.00E-05	1.00E-05*	1.51E-01	1.52E-03	1	1
Benzene	1.50E-04	5.00E-05	1.16E-06	2.11E-07	1.50E-04	5.00E-05	6	5
Methylene Chloride	1.31E-01	2.60E-04	1.60E-04	1.67E-07	1.31E-01	2.60E-04	2	3
TCE	2.15E-03	4.00E-05	1.00E-04	4.00E-07	2.25E-03	4.00E-05	4	6
Tetrachloroethylene	7.00E-05	6.00E-05	1.00E-05	2.88E-07	8.00E-05	6.0E-05	7	4
Vinyl Chloride	2.15E-03	2.00E-05	ND[3]	ND	2.15E-03	2.00E-05	5	7

1. CT: Concentration x Toxicity factor for Water (^{W}T).
2. CT: Concentration x Toxicity factor for Soil (^{S}T).
3. Not detected.

* Based on one detection in soil.

Source: Superfund Public Health Evaluation Manual, 1986.
Public Health Risk Evaluation Database, September 1988.

TABLE B-6
INDICATOR CONTAMINANT SELECTION
NON-CARCINOGEN RANKING

Contaminant	Ground Water CT[1] Maximum	Ground Water CT[1] Representative	Soil CT[2] Maximum	Soil CT[2] Representative	Indicator Score Value Maximum	Indicator Score Value Representative	Tentative Rank Maximum	Tentative Rank Representative
1,1-DCA	5.68E-02	1.38E-03	4.00E-05	1.14E-06	5.68E-02	1.38E-03	4	4
1,1-DCE	1.86E-01	5.02E-03	2.40E-04	2.40E-04*	1.86E-01	5.26E-03	2	2
1,2-DCA	4.54E-02	4.50E-04	3.43E-06	3.43E-06*	4.54E-02	4.50E-04	5	6
1,2-DCE	6.90E-04	2.50E-04	1.00E-05	1.00E-05*	7.00E-04	2.60E-04	13	10
1,1,1-TCA	1.50E-03	2.00E-05	1.72E-06	3.93E-08	1.50E-03	2.00E-05	12	16
Acetone	3.01E-02	1.73E-03	2.30E-04	1.00E-05	3.03E-02	1.74E-03	7	3
Benzene	2.34E-03	7.50E-04	2.00E-05	3.20E-06	2.36E-03	7.50E-04	10	15
Ethylbenzene	6.30E-04	1.90E-04	1.00E-05	6.34E-07	6.40E-04	1.90E-04	14	12
Methylene Chloride	1.31E-01	2.60E-04	1.60E-04	1.67E-07	1.31E-01	2.60E-04	3	9
MEK	7.75E-03	1.90E-04	7.35E-07	6.35E-07	7.75E-03	1.90E-04	9	11
PCP	1.35E-02	3.30E-04	2.60E-06	5.39E-07	1.35E-02	3.30E-04	8	8
TCE	5.25E-01	9.38E-03	2.57E-02	1.00E-04	5.51E-01	9.48E-03	1	1
Tetrachloroethylene	8.00E-05	6.00E-05	1.00E-05	3.13E-07	9.00E-05	6.00E-05	16	15
Toluene	1.87E-03	1.70E-04	4.40E-04	9.55E-07	2.31E-03	1.70E-04	11	13
Vinyl Chloride	4.38E-02	3.60E-04	ND	ND	4.38E-02	3.60E-04	6	7
Xylene	2.60E-04	1.20E-04	5.00E-05	7.55E-07	3.10E-04	1.20E-04	15	14

1. CT: Concentration x Toxicity factor for Water (^{W}T).
2. CT: Concentration x Toxicity factor for Soil (^{S}T).
3. Not detected.

* Based on one detection in soil.

Source: Superfund Health Evaluation Manual, 1986.

TABLE B-7
INDICATOR CONTAMINANT SELECTION

'hemical	Ranking(1) Potential Carcinogen	Non-Carcinogen	Water Solubility (mg/l)	Vapor(2) Pressure (mm/Hg)	Organic Carbon Partitioning(3) Coefficient	IC(4)
.2-DCA	1	5	8.52E+03	6.40E+01	14	X
1-DCE	3	2	2.25E+03	6.00E+02	65	X
CE	4	1	1.10E+03	5.79E+01	126	X
inyl Chloride	5	6	2.67E+03	2.66E+03	57	X
enzene	6	10	1.75E+03	9.52E+01	83	X
etrachloroethylene	7	16	1.50E+02	1.78E+01	364	X
ethylene Chloride	2	3	2.00E+04	3.62E+02	8.8	X
1-DCA	--	4	5.50E+03	1.82E+02	30	X
CP	--	8	1.40E+01	1.10E-04	53000	X
cetone	--	7	1.00E+06	2.70E+02	2.2	
2-DCE	--	13	6.30E+03	3.24E+02	59	
EK	--	9	2.68E+05	7.75E+01	4.5	
ylene	--	15	1.98E+02	1.00E+01	240	
luene	--	11	5.35E+02	2.81E+01	300	
,1-TCA	--	12	1.50E+03	1.23E+02	152	
hylbenzene	--	14	1.52E+02	7.00E+00	1100	

Ranked by maximum indicator score values.

Larger numbers indicate higher volatility..

Large numbers indicate greater attraction to soil.

Indicator Contaminant:

Note: the top seven contaminants in each toxicological category were selected as indicator contaminants. Acetone was eliminated as an indicator contaminant. The reason for this being that exposure to acetone produces very similar effects to those exhibited as a result to exposure to other contaminants selected as indicator contaminants. The evidence for carcinogenicity of acetone in humans is inadequate therefore it is classified as a Class D Potential Carcinogen.

ırce: Superfund Public Health Evaluation Manual, 1986.

TOXICOLOGICAL PROFILES

1,1-DICHLOROETHANE

Toxicity

1,1-Dichloroethane (1,1-DCA) has a molecular weight of 98.96, a solubility in water of 5500 mg/l at 20 C, and a half-life in water that is estimated to be 1.5 days (U.S. EPA, 1984b).

The toxicity of 1,1-DCA following inhalation exposure has not been reported in humans. Very few studies on animals have been completed, but exposures of 1000 ppm to cats revealed renal alterations when exposure was continued for five days per week for 13 weeks. Testing in rabbits, rats and guinea pigs did not produce similar effects. Subchronic and chronic oral exposure studies in rats have found that sustained high level exposure to 1,1-DCA produces a significant increase in mortality rate and associated renal damage (U.S. EPA, 1984b).

Reproductive and Developmental Toxicity

The only available data on the overall reproductive toxicity of 1,1-DCA shows that when rats are exposed to this compound during gestation, via inhalation, there is a significant alteration in bone ossification of the offspring (Schwetzer et al., 1974). There is no data available on the teratogenic or reproductive effects in humans.

Carcinogenicity

Bioassays conducted on rats have found that there is a significant increase in mammary adenocarcinoma incidence following chronic oral exposure to 1,1-DCA (U.S. EPA, 1984b). Studies on mice have found that there is a significantly increased incidence of benign endometrial stromal polyps (U.S. EPA, 1984b). Mutagenicity testing has produced both positive and negative results. Some carcinogenicity tests have also failed to find a relationship between 1,1-DCA and tumor incidence. 1,1-DCA has therefore been assigned as a Group D - Not Classified Chemical (U.S. EPA, 1984b).

Regulations

Regulation or Advisory	Value
[a]TWA - TLV	200 ppm
[b]TWA - STEL	250 ppm

[a]Time Weighted Average - Threshold Limit Value

[b]Time Weighted Average - Short-Term Exposure Level

1,2-DICHLOROETHANE

Toxicity

1,2-Dichloroethane (1,2-DCA) is also known as ethylene dichloride. It has a molecular weight of 99, a vapor pressure of 64 mm Hg at 20 C, and a half-life in water of 4-hours (U.S. EPA, 1984c).

Human data on the subchronic oral toxicity of 1,2-DCA are not available, and the only available animal data provide inconclusive evidence that effects on the immunological systems of rats and mice are due entirely to 1,2-DCA. However, subchronic inhalation studies in animals have identified the rabbit as the most resistant and guinea pig as the most sensitive to the adverse effects of 1,2-DCA. Concentrations of 400 ppm 1,2-DCA resulted in mortality of all guinea pigs within 2 - 40 exposures whereas 165 exposures produced little or no effect on rabbits (Spencer et al, 1951). Other effects on guinea pigs have been hepatomegaly, decreased body weight and hapatic degeneration.

Relevant data on the chronic oral toxicity of 1,2-DCA are available for animals but not humans. Large doses of 1,2-DCA given to rats have led to high mortality rates in males and females due to toxic, not carcinogenic effects. The same was found to be true for female mice only (U.S. EPA, 1984c). In contrast to subchronic studies, various chronic occupational exposures to 1,2-DCA have been documented. In most cases, inhalation of 1,2-DCA has produced symptoms such as nausea, vomiting, anorexia, irritation of the eyes and respiratory tract and in some cases, heart rate elevations, hepatomegaly and nervous disorders with chronic exposure (U.S. EPA, 1984c). Very few chronic inhalation studies on animals have been completed, and those that have do not offer support to the human toxicity data (U.S. EPA, 1984c).

Teratogenicity and Reproductive Effects

No data are available on the teratogenic effects of oral or inhaled 1,2-DCA in humans, or of oral 1,2-DCA in animals. The animal data available with respect to inhaled 1,2-DCA have been inconclusive and although there were fetotoxic results, these could not be distinguished from those caused by the maternal toxicity of 1,2-DCA (U.S. EPA, 1984c).

Carcinogenicity

Animal bioassays provide significant data on the carcinogenic potential of 1,2-DCA, although no human studies on either oral or inhalation exposure to 1,2-DCA and cancer have been completed. In a 1978 NCI study, it was found that oral doses of 1,2-DCA given to rats produce a significant increase in various tumors including hemangiosarcoma, and subcutaneous tissue fibroma in males, whereas in females, mammary adenocarcinoma incidence was significantly elevated. In addition, male and female mice showed an increased incidence of pulmonary alveolar/bronchide adenoma. However, subsequent inhalation studies by Maltoni et al (1980) on rats and mice, did not find a relationship between induction of tumors and treatment with 1,2-DCA. Dermal exposure to 1,2-DCA in mice also did not produce a skin tumor increase, but it was suggested to enhance the incidence of benign papilloma of the lungs (U.S. EPA, 1984c).

Supporting evidence for the potential carcinogenicity of 1,2-DCA is provided by mutagenicity testing. The only significant positive mutation experiments however have been in Drosophila melanogaster and in cultured Chinese hamster ovary cells. In the latter case, the 1,2-DCA was metabolically activated with rat hepatic S-9 fraction and this produced a 4-fold increase in mutagenic response (U.S. EPA, 1984c).

The U.S. EPA classify 1,2-DCA as a group B2 - Probable Human Carcinogen due to the lack of evidence of carcinogenicity in humans despite significant evidence in animals.

Regulations

Regulation or Advisory	Value
[a]One-day (10 kg)	740 mg/l
[a]Ten-day (10 kg)	740 mg/l
[a]Longterm (10 kg)	10,700 mg/l
[a](70 kg)	37,500 mg/l
[a]Lifetime (70 kg)	37,500 mg/l
[a]Proposed MCL	0.005 mg/l
[b]TLV - TWA	10 ppm (40 mg/m^3)

[a]Source: U.S. EPA, 1986

[b]Source: ACGIH, 1987 - 1988

1,1-DICHLORETHYLENE

Toxicity

1,1-DCE is commonly known as vinylidene chloride. It has a molecular weight of 96.94, a water solubility of 2,250 mg/l at 25 C, and a half-life, in water, of approximately 1 - 6 days (U.S. EPA, 1984d).

Animal studies, conducted since the early 1960s, have provided almost all of the information from which human health effects may be assessed. Subchronic oral toxicity data are unreliable, but subchronic inhalation data have revealed that continuous exposure to concentrations of up to 395 mg/m^3 result primarily in liver and kidney damage in rats, guinea pigs, and monkeys. Chronic exposure to 1,1-DCE in drinking water appears to produce adverse hepatic changes in female rats more so than in male rats, especially at low dose levels e.g. 50 ppm (U.S. EPA, 1984d). Liver necrosis, however, was noted amongst high dose male mice (NTP, 1982). Chronic inhalation studies in rats have shown no dose-response alterations with respect to body weight, mortality or clinical chemistry. In addition, minor hepatic alterations were reversed once the dose treatment ceased (McKenna et al, 1982).

Teratogenicity and Reproductive Effects

No human data are available in the literature with respect to teratogenicity or reproductive effects due to oral or inhalation exposure to 1,1-DCE. Oral studies on rats have been inconclusive, whilst inhalation studies on rats have found fetotoxic effects that may be due to the direct maternal toxicity of 1,1-DCE (Murray et al, 1979).

Carcinogenicity

Oral and inhalation exposure data on humans are not available in the literature. Animal bioassays with respect to oral treatment of rats and mice with 1,1-DCE have not found evidence of carcinogenicity. However, inhalation studies on rats and mice have demonstrated a possible relationship between mammary tumors in both species, and kidney tumors in male mice, to 1,1-DCE (Maltoni et al, 1980). Supporting data from mutagenicity assays has found 1,1-DCE induces mutations in *Escherichia coli*, *Bacillus subtilis* and *Salmonella typhimuium*, once activated metabolically, but not in cultured mammalian cells (U.S. EPA, 1984d). The current data have led the U.S. EPA to designate 1,1-DCE as a Group C - Possible Human Carcinogen, based on limited evidence of carcinogenicity in animals (U.S. EPA, 1986).

Regulations

Standard	Value
[a]TLV - TWA	5 ppm (20 mg/m^3)
[b]STEL	20 ppm (80 mg/m^3)
[c]Proposed MCL	0.007 mg/l

Source: ACGIH (American Conference of Governmental Industrial Hygienists), 1988.
[a]Threshold Limit Value - Time Weighted Average
[b]Short-Term Exposure Limit
[c]In U.S. EPA 1986

TRICHLOROETHYLENE

Toxicity

Trichloroethylene (TCE) is a colorless liquid at room temperature. It has a molecular weight of 131.40, a boiling point of 86.7 C and its water solubility at 25 C is 1.366 g/l (ATSDR, 1988b).

Inhalation exposure to TCE of 2900 ppm has produced lethality in humans and a single oral dose of 7000 mg/kg TCE has also been reported to be lethal to humans (ATSDR, 1988b). The systemic and target organ effects of inhalation exposure to TCE have been reported in humans. The primary target organ is the central nervous system (CNS). Symptoms have been reported to range from drowsiness and headache up to short-term memory loss, and vertigo as the doses were increased. Reports of hepatic and renal damage have been limited, and the exposure data were not quantified (ATSDR, 1988b). More information on the results of oral and inhalation exposure to TCE in animals is available.

Inhalation studies in rats and mice have found acute and intermediate-duration exposure produced liver enlargement, increased kidney weight and some hepatocellular alterations (Kjellstrand et al, 1983). Some reports of hematological changes following inhalation of TCE by rats exist, but these have not been well documented (ATSDR, 1988b).

Oral exposure studies have suggested that not only are the liver and kidney affected, but also the immune system. Acute oral exposure to TCE in mice produced inhibited cell-mediated immune reactions (Tucker et al, 1982). Hepatocellular hypertrophy was reported in mouse intermediate-duration oral studies, and renal alterations were found in chronically dosed mice and rats. In addition, continuous oral exposure to TCE in female mice and in rabbits produced significant immunotoxic response, such as inhibited bone marrow stem cell colonization (ATSDR, 1988b).

Teratogenicity and Reproductive Effects

There is inconclusive data available on the developmental toxicity of oral or inhaled TCE to humans. Inhalation studies in rats have found that TCE is fetotoxic (causing skeletal ossification abnormalities) rather than teratogenic.

Other effects include decreased fetal weight and increased litter resorption (Healy et al, 1982). The reproductive toxicity of oral exposure to TCE has been studied in mice and rats. The results showed that acute toxicity involved liver and kidney enlargement in rats, and specifically, intermediate exposure to doses of 1000 mg/kg/day caused alterations in male rat mating behavior. Mice showed a reduced perinatal survival rate (ATSDR, 1988b).

Carcinogenicity

Human studies on the carcinogenicity of TCE are reported in the literature for inhalation exposure but not oral exposure. In particular, several epidemiological studies completed between 1978 and 1985 found significant excesses of cancer above background with the exception of bladder cancer and lymphoma in one study (ATSDR, 1988b). Animal models have been used to assess TCEs potential carcinogenicity and it has been shown that inhalation of 150 ppm TCE by mice results in lung adenocarcinoma increases and 600 ppm exposure to rats causes an increased incidence of renal adenomas and carcinomas (Maltoni et al, 1886). Reports of increases in tumors at other sites include hepatocellular carcinomas and malignant lymphomas (ATSDR, 1988b).

Oral exposure to TCE in mice has provided evidence of increased hepatocellular carcinomas in several studies. Contrary to these findings, TCE did not induce carcinomas in male mice when given in water at dose rate of 8 mg/kg/day over the 61 week experimental period. Nor was TCE found to be carcinogenic to Swiss mice at levels of up to 2,400 mg/kg (ATSDR, 1988b).

Due to the lack of human data, despite the evidence of carcinogenicity in animals, the U.S. EPA classify TCE as a group B2 - Probable Human Carcinogen.

Regulations

Regulation or Advisory	Value
[a]Proposed MCL	0.005 mg/l (eff. 1/89)
[b]MCLG	0.0
8-hr. TWA	100 ppm
[c]TWA-TLV (ACGIH)	50 ppm
TWA (NIOSH)	25 ppm

Source: ATSDR, 1988b

[a]MCL - Maximum Contaminant Level

[b]MCLG - Maximum Contaminant Level Goal

[c]TWA - TLV: Time Weighted Average - Threshold Limit Value

BENZENE

Toxicity

Benzene is a clear, colorless liquid with a boiling point of 80.1 C at 760 mm Hg, a molecular weight of 78.11, and a solubility in water of 820 mg/l at 22 C (ATSDR, 1987).

Accidental inhalation of benzene by humans has led to limited information on its lethality. It has been suggested that a level of 20,000 ppm for 5-10 minutes (continuous exposure) is an acutely lethal dose (Sandmeyer, 1981). Studies on rats suggest benzene inhalation has a low acute toxicity. There is a wide range of oral lethal doses reported for humans, the highest being 428 mg/kg (ATSDR, 1987).

Oral and inhalation studies on rats and mice have led to the conclusion that the systems most affected by benzene are primarily the hematopoietic and immune systems, and in some instances, the nervous system (ATSDR, 1987). Bone marrow effects have been observed in both rats and mice. These effects include a depressed leukocyte count and an increased leukocyte alkaline phosphatase level following acute inhalation exposures of 50 ppm and 300 ppm benzene, respectively (Li et al, 1986). Human data have indicated that acute inhalation exposure of benzene results in symptoms such as headache at levels of 50 - 150 ppm and further increases in exposure levels produce more severe toxicity up to a level of approximately 20,000 ppm for 5 - 10 minutes which may be fatal (ATSDR, 1987). There has been some suggestion that sensitization to benzene may occur leading to strongly adverse effects on subsequent acute, low-level exposure (Aksoy et al, 1976).

Reproductive and Developmental Toxicity

Benzene has been found to be potentially fetotoxic to mice, with effects such as decreased fetal weight evident when exposed to approximately 155 ppm via inhalation. Rabbits exhibit similar effects at 313 ppm (ATSDR, 1987). Mice exposed to 300 ppm benzene for 13 weeks were found to have a degeneration of the testes, decreased sperm count and bilateral cysts were found in the ovaries of the females (Ward et al, 1985). No data are available on the oral or dermal exposure routes and no human data are available.

Carcinogenicity

Several epidemiological studies have been conducted since 1978 and these have been the basis for the assessment of the risk of leukemia from benzene exposure (ATSDR, 1987). Despite the limitations of the data, case histories were analyzed and animal study results interpreted in order to assess unit risk. Inhalation exposure data revealed a unit risk of 2.6 X 10-2 for leukemia. Mice exposed to benzene by govage were shown to develop tumors at doses of 25 and 50 mg/kg for 103 weeks (ATSDR, 1987). Due to the weight of evidence for the carcinogenicity of benzene from epidemiological studies, the U.S. EPA classify it as a Group A - Human Carcinogen.

Regulations

Regulation or Advisory	Value
[a]MCL (Drinking Water)	0.005 mg/l
[b]8-hr. TWA (Air)	1.0 ppm
[c]STEL (Air)	5.0 ppm
WHO International Lifetime Advisory (Drinking Water)	0.01 mg/l
[d]MCLG (Drinking Water)	0.0

[a]Maximum Contaminant Level (Regulation)
[b]Time-Weighted Average (Regulation)
[c]Short-term Exposure Limit (Regulation)
[d]Maximum Contaminant Level Goal (Advisory)

VINYL CHLORIDE

Toxicity

Vinyl chloride has a molecular weight of 62.5, it is a colorless, sweet-smelling gas with a melting point of -153.8 C and a solubility in water of 2763 mg/l at 25 C (ATSDR, 1988c).

Inhalation exposure to vinyl chloride has been reported as lethal in high (unquantified) concentrations, and animal studies on rats and mice have indicated that both inhalation and oral exposure to vinyl chloride decreases longevity. Lethal dose levels have been found to be 100,000 ppm, continuous exposure for 30 minutes, for guinea pigs (ATSDR, 1988). Human data are available for inhalation exposure to vinyl chloride with respect to target organ toxicity. The primary target appears to be the liver and CNS. In addition, animal studies indicate hepatotoxicity following acute inhalation exposure. No data are available on intermediate or chronic inhalation exposures, but for oral exposures in rats, hepatotoxicity was identified from a lifetime study (Feron et al., 1975).

Reproductive and Developmental Toxicity

There is no data in the literature on the reproductive or developmental toxicity of oral exposure to vinyl chloride. However, human data on inhalation exposure show that there may be an increased likelihood of fetal loss, and alterations in sexual function in both sexes (ATSDR, 1988c). However, the data are not quantified. Animal studies in rabbits and mice suggest that development effects do occur after acute and chronic exposure. A one-year rat study found testicular alterations following a 100 ppm intermittent exposure regime (ATSDR, 1988c).

Carcinogenicity

Occupational epidemiology has led to the association of vinyl chloride exposure via inhalation, with various tumors, including liver, brain, and lung (ATSDR, 1988c). Studies in rats and mice indicate that the carcinogenicity of vinyl chloride is manifested as an increased incidence in liver angiosarcomas in rats and lung cancer in mice, even at low level inhalation exposures such as 50 ppm (ATSDR, 1988c). In addition, lifetime dietary administration of vinyl chloride to rats has been shown to increase the incidence of hepatocellular carcinoma and lung tumors in males and females (ATSDR, 1988c). In genotoxicity tests, human lymphocytes tested positive for chromosomal aberrations, and Drosophila tested positive in recessive lethal tests. The U.S. EPA classify vinyl chloride as a Class A - Human Carcinogen (ATSDR, 1988c).

Regulations

Regulation or Advisory	Value
Maximum Contaminant Level (MCL); water	0.002 mg/l
[a]OSHA - 8hr-TWA; air	<1.0 ppm
[b]FDA - packing polymer for food	5 - 50 ppm
[c]ACGIH -8hr-TWA; air	0 ppm

Source: ATSDR, 1988c
[a]Occupational Safety and Health Administration
[b]Food and Drug Administration
[c]American Conference of Governmental Industrial Hygienists

TETRACHLOROETHYLENE

Toxicity

Tetrachloroethylene is a colorless liquid (at room temperature) with a molecular weight of 165.83, a boiling point of 121.2 C at 760 mm Hg, and a solubility in water of 150 mg/l at 25 C (ATSDR, 1988b).

Inhalation studies on the lethality of tetrachloroethylene in rats and mice have indicated decreased longevity in both species. At very high concentrations (1600 - 1750 ppm), over extended periods of exposure (14 days - 13 weeks), treatment-related mortality was found (ATSDR, 1988a). No human inhalation lethality data are available, however human oral exposure to tetrachloroethylene has been conflicting. The therapeutic use of the compound has led to a NOAEL (No-Observed-Adverse-Effect Level) of 60 mg/kg, but one case report has indicated a dose of approximately this size may be lethal (ATSDR, 1988a).

The primary target organs for tetrachloroethylene are the central nervous system (CNS), liver and kidney. Limited data on inhalation of the compound by humans has shown CNS effects ranging from dizziness to nausea and unconsciousness occur (ATSDR, 1988a). In addition, longer-term exposures produce more severe CNS effects, such as, ataxia and short-term memory loss (U.S. EPA, 1985). Inhalation exposure studies in mice have found hepatocellular changes occur under acute exposure conditions, as well as CNS changes. No acute oral exposure data for animals is available but human data on tetrachloroethylene used as an antihelminthic have also reported CNS symptoms such as exhilaration and narcotic effects (ATSDR, 1988a). Intermediate-duration and chronic studies in rats and mice have found hepatic and renal alterations occur, respectively (NCI, 1977)(Buben and O'Flaherty, 1985).

Reproductive and Developmental Toxicity

No data was available on the reproductive and developmental toxicity of oral exposure to tetrachloroethylene. Animal data on the results of inhalation exposure to the compound showed mice to have an increased number of embryotoxic effects, such as split sternebrae, and rats to have an increased percentage of fetal resorption (ATSDR, 1988a). Only mice exhibited reproductive alterations, that is, an increased frequency of abnormal sperm, when exposed to 500 ppm for 7-hr./day over 5 consecutive days (ATSDR, 1988a).

Carcinogenicity

Inhalation exposure to tetrachloroethylene has been found to result in an elevated mononuclear cell leukemia rate in rats of both sexes and an elevated hepatocellular carcinoma incidence in mice of both sexes (NTP, 1986). This latter effect on mice was found to be true in the 1977 NCI study on rats and mice. Due to the inadequacy of human data and the sufficient evidence of carcinogenicity in animals, the U.S. EPA classifies tetrachloroethylene as a Group B2 - Probable Human Carcinogen (ATSDR, 1988a).

Regulations

Regulation or Advisory	Value
[a]OSHA Permissible Exposure Level (PEL)	100 ppm (8-hr.TWA[b])
[c]EPA Health Advisories	
One-day (10 kg)	2.0 mg/l
Ten-day (10 kg)	2.0 mg/l
Long-Term (70 kg)	5.0 mg/l

Source: ATSDR, 1988a

[a]Occupational Safety & Health Administration

[b]Time Weighted Average

[c]U.S. EPA

METHYLENE CHLORIDE

Toxicity

Methylene chloride has a molecular weight of 84.0 g, and has a solubility in water of 13 kg/l at 25 C. Its half-life in water has been estimated to be between 1 - 6 days (U.S. EPA, 1984e).

There have not been any reports on the effects of oral exposure to methylene chloride in humans. The only animal study on oral subchronic exposure to animals defined a no-observed-effect-level (NOEL) of 12.5 mg/kg/day in rats (U.S. EPA, 1983). Subchronic inhalation exposure to methylene chloride in rats, mice and monkeys appears to be associated with liver and kidney lesions. Sensitivity to this compound seems to be greatest in rats (U.S. EPA, 1983). The occupational exposures to methylene chloride that have been reported involved symptoms ranging from mild lightheadedness to toxic encephalosia following 5 years of direct contact with the compound daily. However, a 1983 study (Ott et al.) found no increase in mortality, in men or women, due to cardiopulmonary disease or malignant neoplasm associated with methylene chloride exposure. Most epidemiological studies since 1980 have not found associations between methylene chloride exposure and incidence of cardiac alterations or CNS aberrations. Animal studies on the chronic inhalation of methylene chloride have found to produce hepatocellular changes in rats. These included foci of multinucleated hepatocytes and necrosis of various hepatic regions, in high-dose females and males respectively (U.S. EPA, 1984e). Not all animals respond to methylene chloride exposure to the same degree. Hamsters were reported to be less sensitive than rats with respect to evidence of toxicity (U.S. EPA, 1984e).

Reproductive and Developmental Toxicity

No data are currently available on the potential reproductive or developmental toxicity of methylene chloride to humans via oral or inhalation exposure. Animal studies on rats and mice have found significant reductions in fetal body weight and some accelerated bone development in the respective species (U.S. EPA, 1984e).

Carcinogenicity

There are no data available on the potential for carcinogenicity of methylene chloride in humans. Oral exposure bioassays on both rats and mice have found methylene chloride to produce a small but significant increase in the incidence of hepatocellular tumors leading the EPA to conclude the compound has "borderline" carcinogenicity (U.S. EPA, 1984e). Inhalation studies in rats have revealed that in some instances, there is a significant increase in the number of benign mammary tumors in females, and in liver tumors in both sexes (U.S. EPA, 1984). In addition to the liver tumors, mice were also found to have an elevated lung tumor incidence. Due to the lack of evidence of carcinogenicity in humans, the U.S. EPA classify methylene chloride as a B2 - Probable Human Carcinogen.

Regulations

Regulation or Advisory	Value
[a]TLV (ACGIH)	100 ppm
[b]STEL (ACGIH)	350 ppm
EPA - Ambient Water Quality Criteria	6 mg/l

[a]Threshold Limit Value (American Conference of Governmental Industrial Hygienists)

[b]Short-Term Exposure Limit

PENTACHLOROPHENOL

Toxicity

Pentachlorophenol (PCP) has a molecular weight of 266.35, a solubility in water of 14 mg/l at 20^{o}C, and a half-life in water of 14 days (U.S. EPA, 1984f).

Epidemiological studies have revealed a variety of adverse effects due to occupational exposure to PCP, but the routes of exposure (dermal, oral, or inhalation) were not separated. These effects include serum enzyme induction (Klemmer et al., 1980) and depressed kidney function, which may be partially reversible (Begley et al., 1977).

A number of studies have found that subchronic oral exposure to technical grade PCP contaminated with dibenzo-p-dioxin, produce effects in rats that were not seen in parallel experiments where pure PCP was used (Johnson et al., 1973; Goldstein et al., 1977; Kerkvliet et al., 1982). Schwetz et al. (1978) exposed groups of 27 male and 27 female rats to 0, 3, 10, or 30 milligrams purified PCP/kilogram body weight/day (mg/kg/day) for either 22 months (males) and 24 months (females). At the 30 mg/kg/day level of treatment, a reduced body weight gain and increased specific gravity of the urine were observed in females. Pigmentation of the liver and kidneys was observed in females exposed to 10 or 30 mg/kg/day, and in males exposed to 30 mg/kg/day.

Teratogenicity and Reproductive Effects

Although studies that have investigated the teratogenicity of orally administered PCP in rodents have failed to demonstrate teratogenicity, fetotoxic effects associated with delayed skeletal ossification were observed (Larsen et al., 1975). A study in which 10 male and 20 female rats were fed PCP 62 days prior to mating showed fetotoxic effects as well as maternal toxicity occurring at a level of 30 mg PCP/kg/day (Schwetz et al., 1978). Since PCP apparently does not cross the placental barrier, the observed fetotoxicity may be a reflection of maternal toxicity (Larsen et al., 1975).

No data are available on the teratogenic effects of inhaled PCP in humans or in animals.

Carcinogenicity

There is no convincing evidence from epidemiological studies to indicate that inhalation of PCP in any form produces cancer in humans (Fingerhut et al., 1974; Gilbert et al., 1981; Greene et al., 1978; Roberts, 1983; and Robinson et al., 1985). No data are available in regard to cancer in animals following PCP inhalation exposure.

The carcinogenicity of orally administered PCP has been tested in at least three separate studies using mice (BRL, 1968; NTP, 1988; Schwetz et al., 1978). The purity of the PCP tested varied between the studies. The NTP tested both TG-Penta, a composite mixture of three technical grades of PCP which was reported to be 90% pure, and Dowicide EC-9 a mixture containing 90% pure PCP and fewer dioxin impurities than the TG-Penta. BRL tested Dowicide EC-9 and Schwetz reportedly tested pure PCP.

No significant elevation in the incidence of cancer occurred in the BRL Dowicide EC-9 study; however in the NTP Dowicide EC-9 study significant increase in incidence of tumors were observed. Male mice displayed significant dose-related increases in the incidence of adrenal medulla pheochromocytomas (benign and malignant), heptacellular adenomas and carcinomas. Female mice in the high dose group displayed significant increases in the incidence of hepatocellular ademonma and carcinoma (benign and malignant) and in hemangiosarcomas (spleen and liver).

In the NPT study using TG-Penta male mice displayed a significant increase in tumors of the adermal medulla pheochromocytomas (benign and malignant) and liver adenomas and carcinomas. Female mice displayed significant increase incidence of hemangeosarcomas of the spleen and liver. A high level of dioxin were found to be a contaminant of the TG-Penta mixture. Dioxin exposure has been associated with an increased incidence of liver tumors in treated mice but not with pheochromocytomas or hemangiosarcomas (NCI/NTP 1980). The occurrence of the rare hemangiosarcomas was considered to be a carcinogenic response due to PCP exposure.

No significant increase in the incidence of tumors were observed during the Schwetz et al. study.

EPA has tentively classified PCP as a B2--probable human carcinogen--based on the results of the NTP (1988) study. This classification is not verified and, together with cancer potency factor, is currently being reviewed by EPA. (Personal communication with CRAVE workgroup).

Regulations

Standard	Value
[a]TLV-TWA	0.5 mg/m^3
[b]proposed MCLG	.22 mg/l
[c]Action Level	2.2 ug/l
[d]WQC	1.01 mg/l
EPA Health Advisory	
One-day (10kg)	1.0 mg/l
10-day (10kg)	0.3 mg/l
Long Term (70kg)	1.05 mg/l

[a]Threshold Limit Value-Time Weighted Average
[b]Propose Maximum Contaminant Level Goal
[c]California Action Level
[d]EPA Ambient Water Quality Criteria

SUMMARY OF GROUND WATER MODELING

CONTAMINANT TRANSPORT MODELING

Subsurface transport of contaminants beneath and downgradient of the Jasco site was modeled using two different types of models. A one-dimensional analytical model (Javandel et al., 1984) was utilized to simulate the leaching (vertical downward migration in the unsaturated zone) of contaminants through the unsaturated soil into the A-aquifer. The subsequent transport of contaminants within the A-aquifer (saturated zone) downgradient of the site was modeled using a numerical model, SUTRA (Voss, 1984). With the aid of these two models, the areal distribution of concentration of each contaminant in the A-aquifer downgradient of the site was projected over a period of 70 years.

Both models utilized available data from previous subsurface investigations at the site. Data which is not available, but required by the models, was estimated using documented procedures or obtained from published data.

UNSATURATED ZONE

Modeling of contaminant migration in the unsaturated zone was performed using the one-dimensional analytical model mentioned above. The model simulated the leaching of contaminants from near the ground surface down to the A-aquifer below as a result of recharge from precipitation. The recharge from precipitation acted as a transport mechanism for the vertical downward migration of contaminants. A time-dependent concentration profile for each contaminant in the leachate as it enters the A-aquifer was generated by the model for the entire period of simulation.

The location of Well V-2 at the drainage swale area was chosen for simulating the vertical downward migration of contaminants into the A-aquifer. The drainage swale area has the highest level of soil contamination as indicated by the available soil sampling data (Wahler Associates, August and June 1988). Most of the contaminants were found to occur with a high concentration at a depth of approximately three feet below the ground surface. The geologic cross-section of Well V-2, as depicted in the Aquifer Testing Report (Wahler Associates, December 1987), showed the thickness of the unsaturated zone to be about 32 feet.

Figure C-1 illustrates the cross-section through the unsaturated zone as utilized in the modeling.

Input parameters required by the model are the pore water velocity and coefficient of dispersion in the unsaturated zone. The pore water velocity was estimated using the equation by Enfield et al. (1982) (see Equation (2) in Calculation below) as described in the draft Superfund Exposure Assessment Manual (SEAM) (Schultz et al., 1986). A pore water velocity of 5.4×10^{-8} foot per second was obtained using a recharge (percolation) rate of eight inches per year and a saturated hydraulic conductivity of 4.8×10^{-6} foot per second. Harding Lawson Associates (1987) has estimated that approximately eight inches of precipitation are potentially available for recharge into the local aquifer annually. The saturated hydraulic conductivity is the average of the two values reported in the Phase II Hydrogeological Investigation (Wahler Associates, November 1987). The volumetric water content of the soil (required for calculating the pore water velocity) under a saturated condition is not available. Hence, it was obtained from the SEAM by assuming a silty clay soil for the unsaturated zone. This assumption was made based on information from the geologic cross-section (or boring log) for Well V-2. The coefficient of dispersion, which is the product of pore water velocity and longitudinal dispersivity, was calculated to be 1.7×10^{-7} foot square per second. Field data on the longitudinal dispersivity for the unsaturated zone is not available. Using the guideline from Gelhar and Axness (1981), the longitudinal dispersivity was estimated to be 3.2 feet by taking 10 percent of the distance to the ground water. The vertical downward migration of the contaminants was assumed to occur with no retardation or decay. This conservative assumption was made due to the lack of field data.

For the purpose of modeling, the length of the "chemical spill" period that resulted in the contamination of soil and ground water beneath the site needs to be evaluated. A constant source of solute (contaminant) was introduced into the soil together with the recharge from precipitation. Using the soil and ground water data for methylene chloride, a "chemical spill" period of approximately 14 years was determined to be required in order to reproduce the available soil and ground water data (3400 parts per million for soil and 142 parts per million for ground water). The data for methylene chloride was used as it has the highest reported concentration in both the soil and ground water. In addition, SUTRA was also

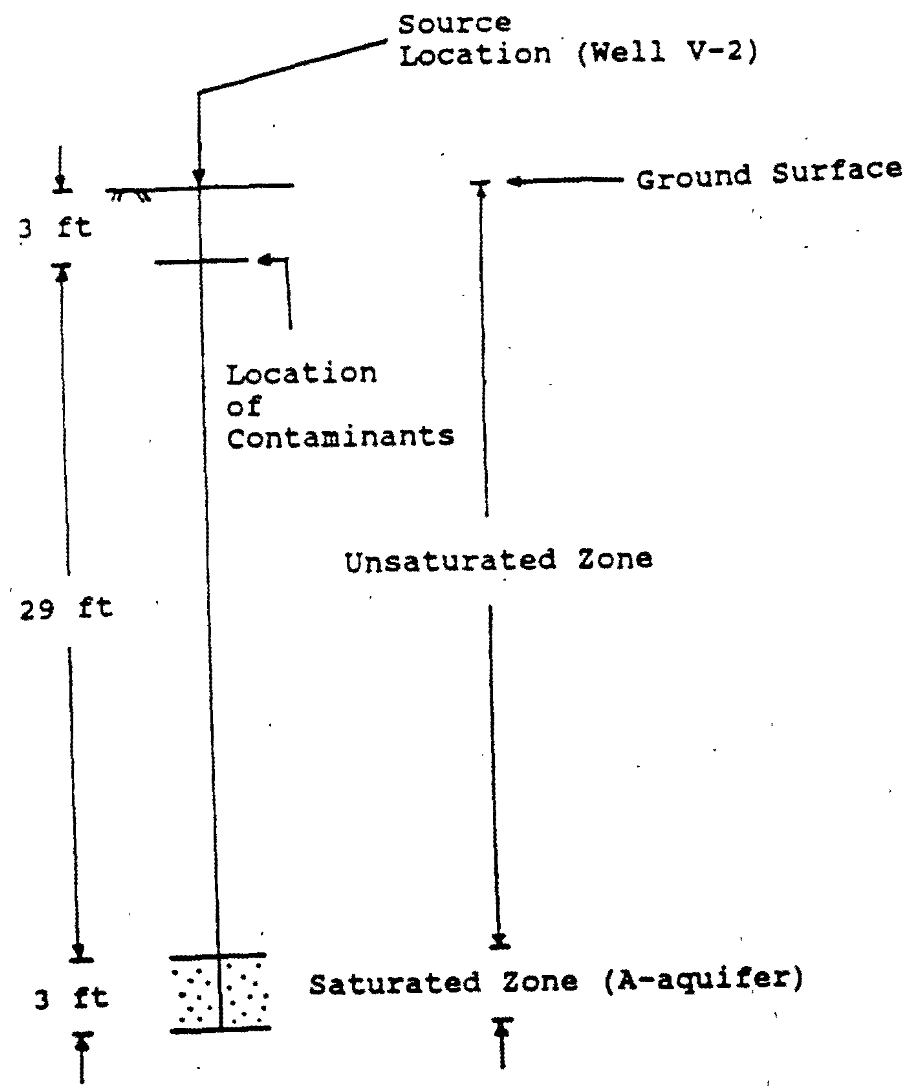

Figure C-1: Cross-Section through the Unsaturated Zone (As Modeled) utilized in determining this time period (see SATURATED ZONE below). Evaluation of the "chemical spill" period was done solely for the purpose of facilitating the modeling. It does not in any way imply that a continuous "chemical spill" has occurred over a period of 14 years.

Simulation of contaminant migration in the unsaturated zone was conducted in two stages. During the first stage (14 years), a constant source of contaminant was introduced into the soil together with the recharge from precipitation (as explained in the previous paragraph). The simulation continued into the second stage for a period of 70 years. The second stage simulated the leaching of contaminants from near the ground surface into the A-aquifer from precipitation. No contaminant was introduced into the soil during the second stage.

The simulation was conducted using each of the contaminants. Table C-1 shows the concentration value for each contaminant as used in the model simulation at a depth of three feet. These values represent the concentration in the soil at the end of the first stage simulation. Notice that the concentration value for four of the contaminants (1,2-DCA, vinyl chloride, 1,1-DCA, and PCP) used for model input differed from the reported values. A higher concentration value was necessary for these four contaminants in order to reproduce the concentration reported in the ground water (see Table C-1). The reason being that the same "chemical spill" period was assumed for all the contaminants.

The time-dependent concentration profile of each contaminant in the leachate at the base of the unsaturated zone was generated. Figure C-2 shows the time-dependent concentration profile of methylene chloride in the leachate prior to entering the A-aquifer.

TABLE C-1

Contaminant	Soil Concentration (ppm) Highest Value Reported	Soil Concentration (ppm) Value Used For Model Input (Unsaturated Zone)	Ground Water Concentration (ppm) Highest Value Reported	Ground Water Concentration (ppm) Value Used For Model Input (Saturated Zone)
1,1-DCE	13	13	0.17	0.54
1,2-DCA	3.9	62	2.58	2.58
Methylene Chloride	3400	3400	142	142
PCE	17	17	0.008	0.71
TCE	490	490	0.019	20
Vinyl Chloride	<0.05	0.38	0.016	0.016
Benzene	3.0	3.0	0.02	0.12
1,1-DCA	47	53	2.2	2.2
PCP	0.2	1.2	0.05	0.05

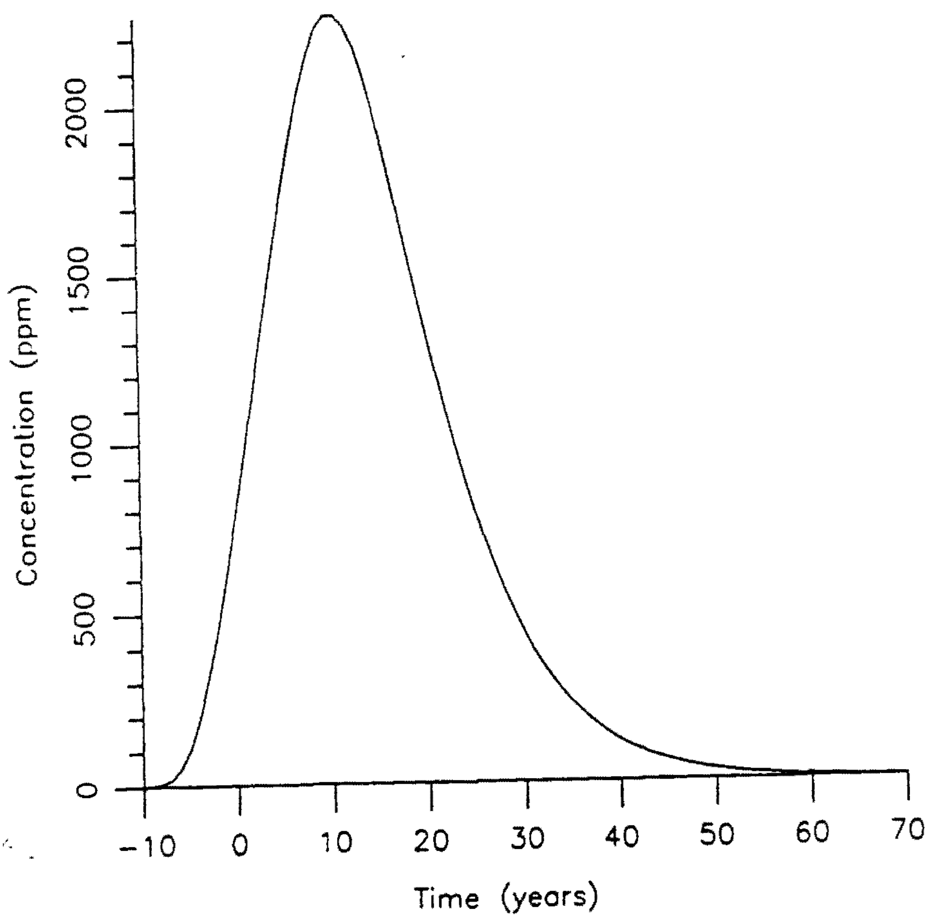

Figure C-2: Time-Dependent Concentration of Methylene Chloride Prior to Entering the A-Aquifer

Calculation

Given:

1) Recharge from precipitation, $q = 8$ in/year (2.1×10^{-8} ft/s).
2) Volumetric water content of soil under saturated conditions $O_s = 0.492$ (silty clay, Table C-2).
3) $b = 10.40$ (silty clay, Table C-2).
4) Saturated hydraulic conductivity, $k_s = 4.8 \times 10^{-6}$ ft/s (average of 7.9×10^{-6} and 1.7×10^{-6}).
5) Depth to ground water, $d = 32$ ft.

Required:

1) Volumetric water content of unsaturated zone, O.

$$
\begin{aligned}
O &= O\,(q/k_s)^{(1/[2b + 3])} && (1)\\
&= 0.492\,(2.1 \times 10^{-8}/4.8 \times 10^{-6})^{(1/0.042)}\\
&= 0.39
\end{aligned}
$$

2) Pore water velocity, V.

$$
\begin{aligned}
V &= q/O && (2)\\
&= ([2.1 \times 10^{-8}\ \mathrm{ft/s}]/[0.39])\\
&= 5.4 \times 10^{-8}\ \mathrm{ft/s}
\end{aligned}
$$

3) Longitudinal dispersivity, L.

$L = 0.1 \times 32 = 3.2$ ft.

4) Dispersion coefficient, D.

$$
\begin{aligned}
D &= LV && (3)\\
&= 3.2\,(5.4 \times 10^{-8})\\
&= 1.7 \times 10^{-7}\ \mathrm{ft^2/s}
\end{aligned}
$$

SATURATED ZONE

Migration of contaminants in the A-aquifer downgradient of the site was modeled using SUTRA. The numerical scheme employed by SUTRA enabled the simulation of the time-dependent concentration of the leachate entering the aquifer, and the

TABLE C-2*
REPRESENTATIVE VALUES OF HYDRAULIC PARAMENTERS
(STANDARD DEVIATION IN PARENTHESES)

Soil Texture	No. of Soils(a)	b(b)		$\frac{1}{2b+3}$	O_s(c)	
Sand	13	4.05	(1.78)	0.090	0.395	(0.056)
Loamy Sand	30	4.38	(1.47)	0.085	0.410	(0.068)
Sandy Loam	204	4.90	(1.75)	0.080	0.435	(0.086)
Silt Loam	384	5.30	(1.87)	0.074	0.485	(0.059)
Loam	125	5.39	(1.87)	0.073	0.451	(0.078)
Sandy Clay Loam	80	7.12	(2.43)	0.058	0.420	(0.059)
Silt Clay Loam	147	7.75	(2.77)	0.054	0.477	(0.057)
Clay Loam	262	8.52	(3.44)	0.050	0.476	(0.053)
Sandy Caly	19	10.40	(1.64)	0.042	0.426	(0.057)
Silt Clay	441	10.40	(4.45)	0.042	0.492	(0.064)
Clay	140	11.40	(3.70)	0.039	0.482	(0.050)

* Adapted from SEAM.

(a) Number of individual soil samples included in data compiled by Clapp and Hornberger (1978).

(b) Empirical parameter relating soil matric potential and moisture content; shown to be strongly dependent on soil texture.

(c) Volumetric soil moisture content (volume of water per volume of soil).

Source: Adapted from Clapp and Hornberger, 1978.

subsequent two-dimensional areal transport of the contaminants. The areal distribution of concentration of each contaminant was projected by the model over a period of 70 years.

Simulation of contaminant migration in the saturated zone using SUTRA necessitated the construction of a finite-element mesh (see Figure C-3). This mesh is to be placed over the region of the aquifer to be modeled. The mesh was designed to encompass the contaminant plume projected after 70 years. The longitudinal direction of the mesh was oriented in the direction of the regional ground water flow (N30^{o}E) as reported in the Phase II Hydrogeologic Investigation (Wahler Associates, November 1987). Each node on the mesh corresponds to a location in the aquifer. On-site monitoring wells (Wells V-1 through V-10) are represented by nodal points on the mesh.

Limited hydrogeologic data is available for use in simulating contaminant migration in the aquifer using the model. All known data points (on-site monitoring wells) are clustered in close proximity to the location of the source within a relatively small area compared to the size of the area being modeled. Due to the limited distribution of data points over the modeled area, a projection of data from a relatively small area to the remainder of the modeled area was performed. As such, the aquifer modeled will not be truly representative of the actual aquifer. This procedure was adopted in order to enable the simulation to be conducted with the limited amount of data. Results should be viewed with this in mind.

Aquifer parameters such as the initial piezometric head and ground water quality (background concentration), saturated thickness, effective porosity, hydraulic conductivity, and longitudinal and transverse dispersivities are required for input into the model. As in the case of the unsaturated zone modeling, the contaminants were assumed to migrate in the aquifer without any retardation or decay. The ground water was assumed to be clean prior to the "chemical spill".

The piezometric head for all the nodal points (with the exception of seven) was obtained by assuming a hydraulic gradient of 0.004 foot per foot (Wahler Associates, November 1987) along the assumed flow direction (N30^{o}E). Nodal

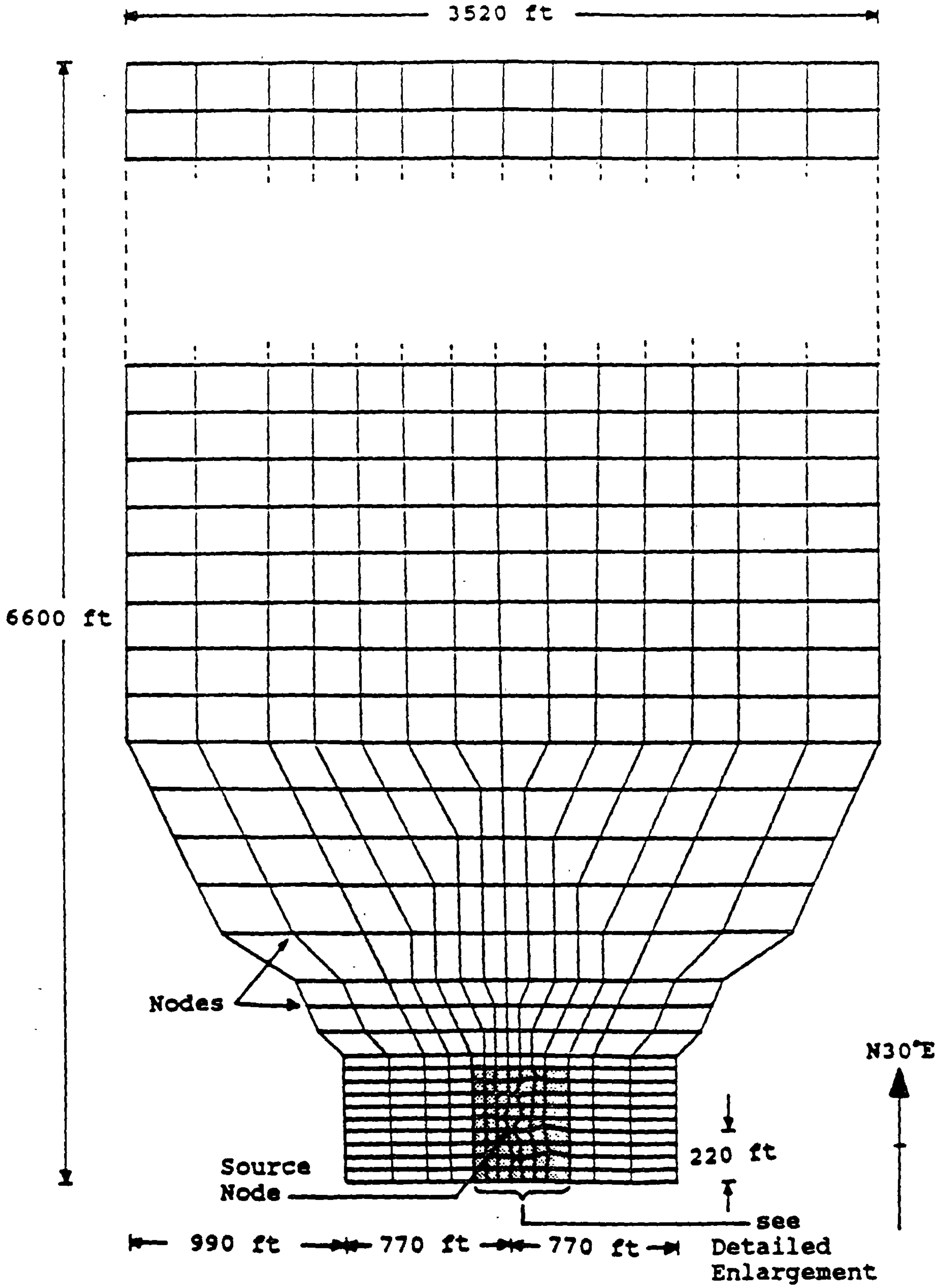

Figure C-3: Finite-Element Mesh

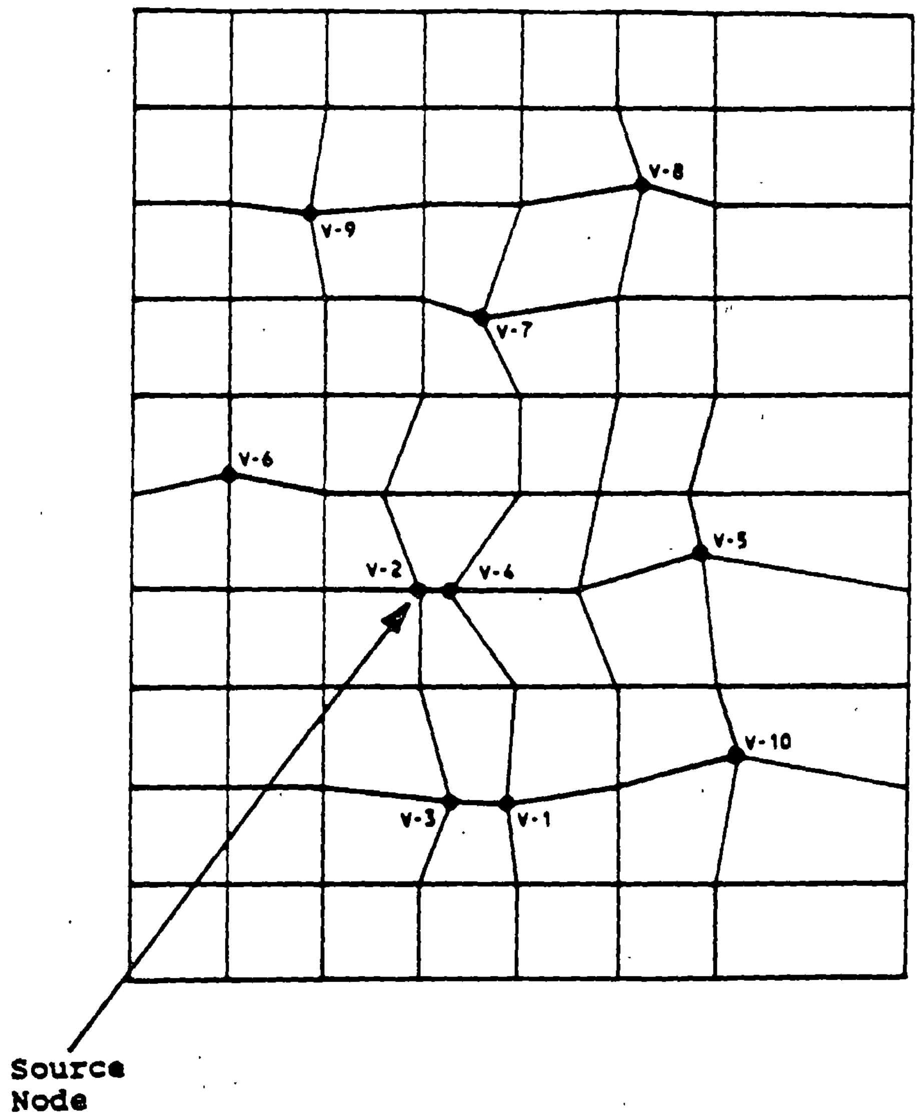

Figure C-3 (continued): Finite-Element Mesh
- Detailed Enlargement Showing Well Locations

points corresponding to Wells V-1 through V-7 were assigned the piezometric heads observed on October 7, 1987 (see Table C-3).

The saturated thickness throughout the A-aquifer was obtained from boring logs as well as values reported in the Aquifer Testing Report (see Table C-3). Only the nodal points corresponding to Well V-1 through V-10 possess values of the saturated thickness. Interpolation was performed to determine the saturated thickness within the area bounded by the 10 wells. For the rest of the nodal points, an average value of the saturated thickness (5.6 feet) was used.

A single value of hydraulic conductivity was used for the entire area being modeled. Hydraulic conductivity values are available from slug tests for Wells V-1 through V-7 (Aquifer Testing Report). A more reliable pump test on Well V-4 yielded a hydraulic conductivity value of 7.9×10^{-3} foot per minute which differed significantly from the slug test value of 1.5×10^{-2} foot per minute (Aquifer Testing Report). Since the pump test is a more reliable method and the fact that the slug test results for Wells V-1 through V-7 varied greatly from each other, the slug test results were not utilized. The effective porosity of the aquifer was assumed to be 0.4 as used in the Aquifer Testing Report (per Freeze and Cherry, 1979).

Dispersion of contaminants in an aquifer is described in part by the longitudinal and transverse dispersivities. Field data is not available for these parameters. A longitudinal dispersivity of 100 feet is given by Pettyjohn et al. (1982) for an alluvial sediment aquifer in California. The transverse dispersivity was computed as 30 feet by taking 30 percent of the longitudinal dispersivity (Konikow and Bredehoeft, 1978).

Simulation of contaminant migration in the aquifer by SUTRA was conducted in two stages similar to the unsaturated zone modeling. Results from the first stage simulation correspond to the highest reported concentration value of each contaminant in the aquifer (see Table C-1). As in the case of the unsaturated zone, a higher concentration value was used for some of the contaminants (1,1-DCE, PCE, TCE and benzene). The reason being that the unsaturated zone modeling predicted a higher concentration value in the ground water based on the available soil concentration data. Note that methylene chloride was used in determining the

TABLE C-3

Monitoring Well No.	Saturated Thickness(1) (ft)	Piezometric Head(2) (ft)
V-1	0.5	34.6
V-2	3.0	34.1
V-3	4.0	34.5
V-4	7.0	34.1
V-5	3.0	34.1
V-6	7.0	34.0
V-7	13.5	33.5
V-8	5.0	---
V-9	5.0	---
V-10	7.5	---

(1) From boring logs and the Aquifer Testing Report (Wahler Associates, December 1987).
(2) Taken on 10/7/87 (above mean sea level) (Wahler Associates, November 1987).

length of the "chemical spill" period to reproduce the concentration data in the soil and ground water. The same "chemical spill" period was assumed for the rest of the contaminants. The second stage simulation produced the areal distribution of concentration of each contaminant over a period of 70 years.

Figure C-4 shows the isoconcentration plot for each contaminant at the end of the 70-year period. The isoconcentration plot shows the migration of contaminants in the direction of the regional ground water flow as expected. At the end of the 70-year period, the predicted contaminant plume appeared to extend as far as 5,500 feet downgradient of the source as depicted by the methylene chloride plume. Laterally, the contaminant plume extends over a distance of approximately 2,900 feet (see Figure C-4, isoconcentration plot for methylene chloride). The outermost isoconcentration line in each plot represents the drinking water ingestion limit of the contaminant. The time-dependent concentration of methylene chloride at 55 feet and 2200 feet downgradient of the source is depicted in Figures C-5 and C-6 respectively.

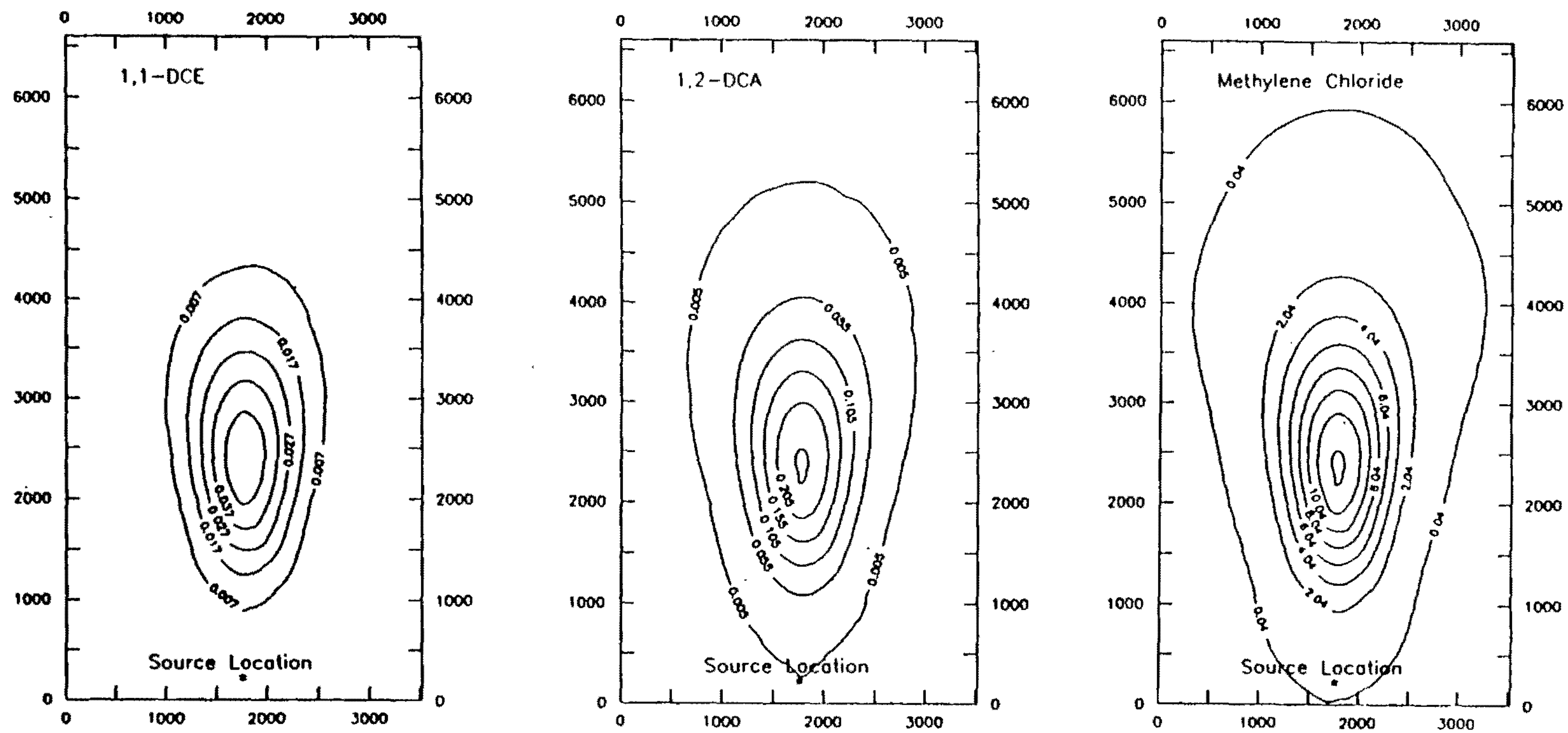

Figure C-4: Isoconcentration Plot for Each Contaminant at the End of the 70-Year Period (ppm)

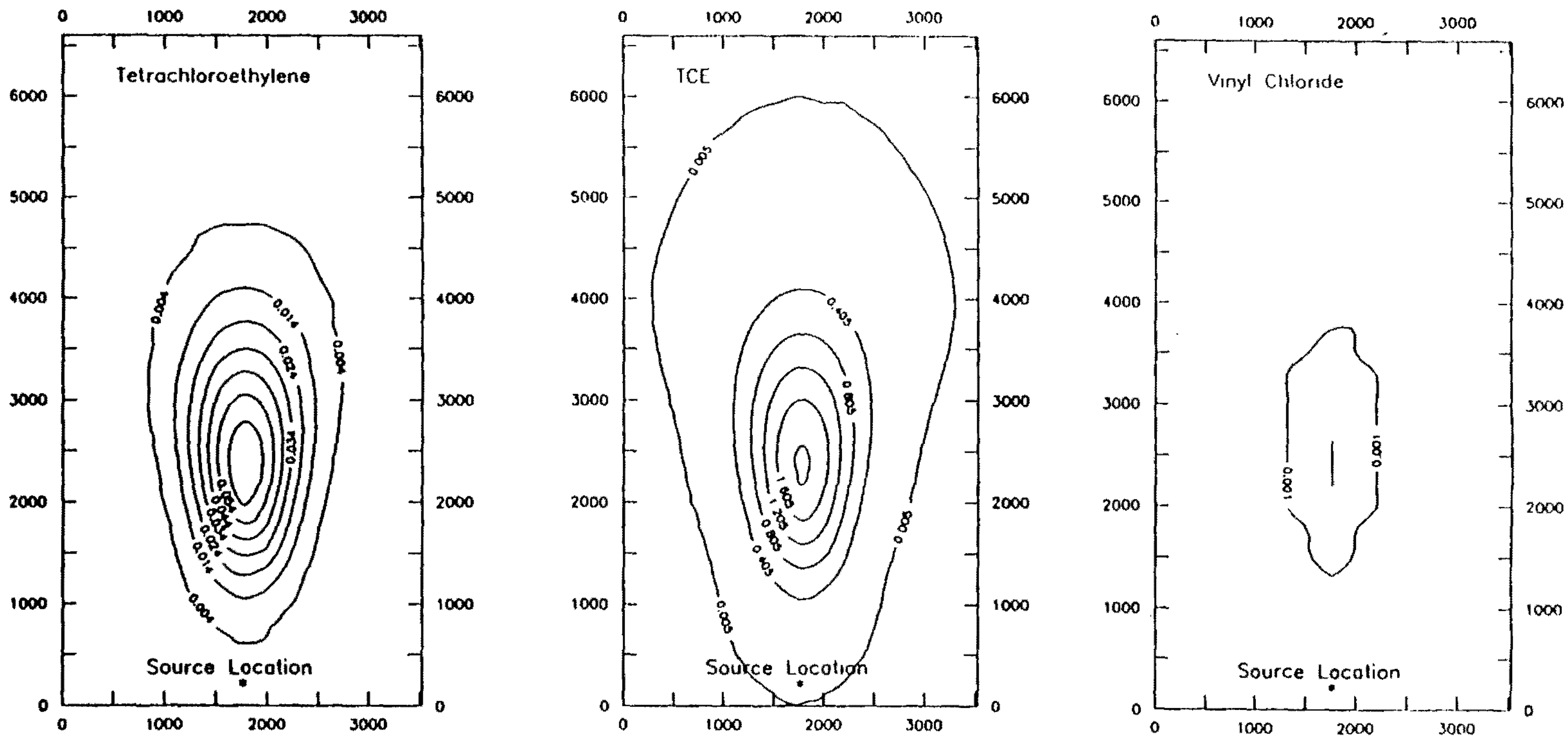

Figure C-4 (continued): Isoconcentration Plot for Each Contaminant At the End of the 70-Year Period (ppm)

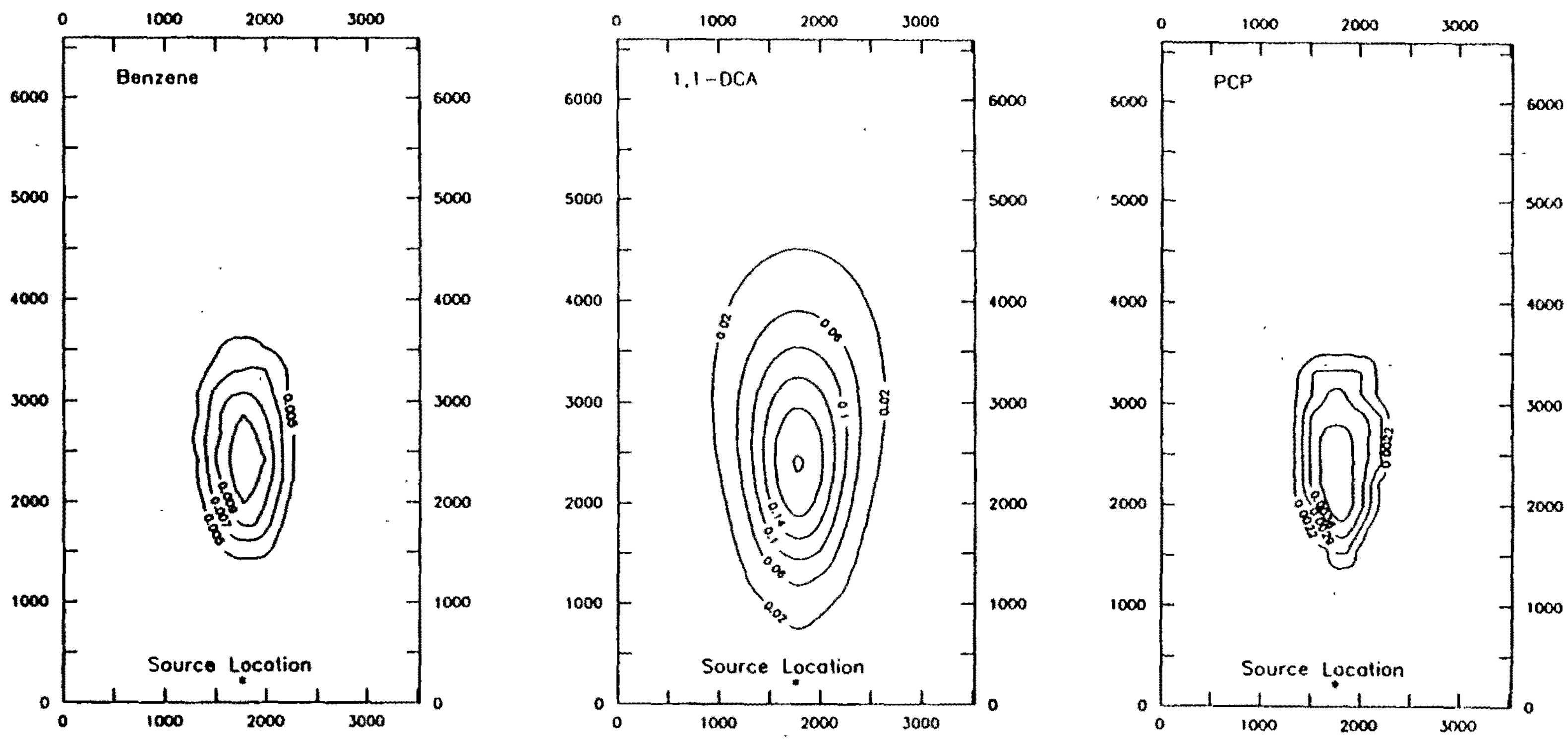

Figure C-4 (continued): Isoconcentration Plot for Each Contaminant At the End of the 70-Year Period (ppm)

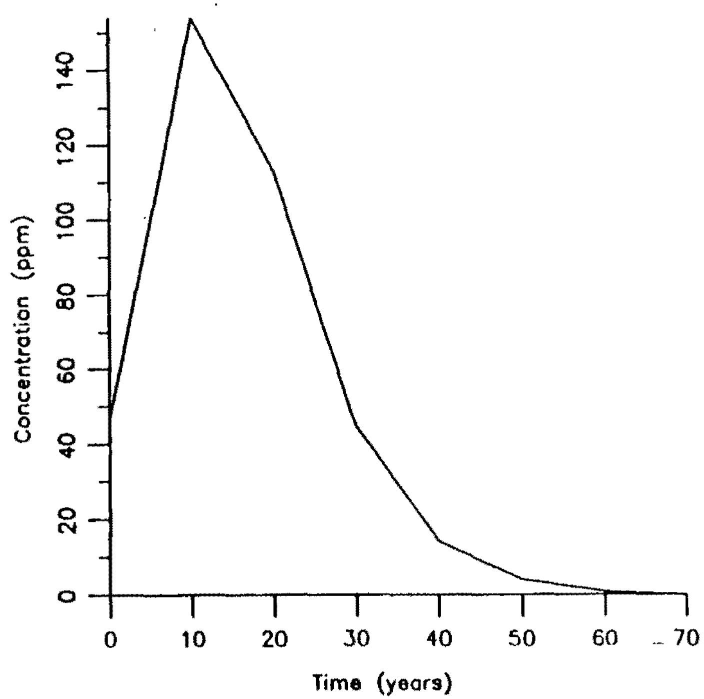

Figure C-5: Time-Dependent Concentration of Methylene Chloride at 55 Feet Downgradient Of the Source

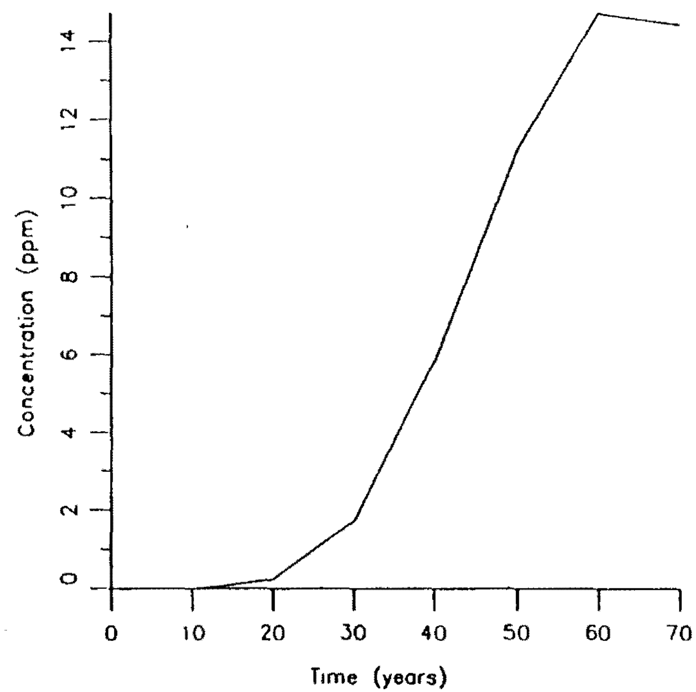

Figure C-6: Time-Dependent Concentration of Methylene Chloride at 2200 Feet Downgradient Of the Source

CONCLUSION

The results generated by the two models are based on limited field data obtained from past site investigations. There is a lack of sufficient field data to adequately define the unsaturated zone. Limited field data from the site was extrapolated to the entire region of the aquifer being modeled. This extrapolation of data resulted in a homogeneous aquifer beyond the cluster of data points (on-site monitoring wells). Model calibration, an important part of modeling, was not performed due to the absence of historical field data and the fact that data points are poorly distributed over the entire region of the aquifer being modeled.

When interpreting the results from the models, one has to keep in mind the limitations of the field data and its use in characterizing the subsurface system. The models cannot predict with sufficient accuracy in the absence of adequate field data needed to properly describe the subsurface system. Furthermore, a model can only approximate and not duplicate a real system. The results, however, can be used to provide a general understanding of the degree and extent of the ground water contamination over a period of time.

REFERENCES

1. Clapp RB, Hornberger GM. 1978. *Empirical Equations for Some Soil Hydraulic Properties.* Water Resources Research. 14:601-604.
2. Enfield CG, Carsel RF, Cohen SZ, Phan T, Walters DM. 1982. *Approximating Pollutant Transport to Ground Water.* Ground Water 20(6) 711-722.
3. Freeze RA, Cherry JA. 1979. *Groundwater.* Englewood Cliffs, NJ: Prentice-Hall, Inc.
4. Gelhar LW, Axness CJ. 1981. *Stochastic Analysis of Macro-Dispersion in 3-Dimensionally Heterogeneous Aquifers.* Report No. H-8. Hydraulic Research Program. New Mexico Institute of Mining and Technology, Soccorro, NM.
5. Harding Lawson Associates. 1987. Remedial Investigation Report. Draft Report prepared for Environmental Protection Agency, Region IX on behalf of Fairchild Semiconductor Corp., Intel Corp., Raytheon Corp.

6. Javandel I, Doughty C, Tsang CF. 1984. *Groundwater Transport: Handbook of Mathematical Models.* Water Resources Monograph 10, AGU; Washington, D.C.

7. Konikow LF, Bredehoeft JD. 1978. *Computer Model for Two-Dimensional Solute Transport and Dispersion in Ground Water.* U.S. Geological Survey Techniques of Water-Resources Investigations, Book 7, Chapter C2.

8. Schultz HL, Palmer WA, Dixon GH, Gleit AF. 1986. *DRAFT Superfund Exposure Assessment Manual.* Submitted to Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington D.C., Versar Inc., Springfield, Virginia.

9. Voss CI. 1984. *SUTRA: A Finite Element Simulation Model for Saturated-Unsaturated Fluid-Density-Dependent Ground-Water Flow with Energy Transport or Chemically-Reactive Single-Species Solute Transport. U.S.G.S.* Water Resources Investigation Report 84-4369.

10. Wahler Associates. November 1987. *Phase II Hydrogeologic Investigation.*

11. Wahler Associates. December 1987. *Aquifer Testing Report.*

12. Wahler Associates. June 1988. *Evaluation of Interim Remedial Alternatives.*

13. Wahler Associates. August 1988. *Soils Characterization Report and Runoff Management Plan.*

SCREENING ANALYSIS FOR AIR EMISSIONS

AIR EMISSIONS RESULTING FROM THE VOLATILIZATION OF INDICATOR CONTAMINANTS IN SOILS

Emission Calculation Methodology

The potential air emissions resulting from the volatilization of carcinogenic organic materials contained in the soil in the rainwater runoff drainage swale are as follows:

Methylene chloride	74.55 lbs
Trichloroethylene	3.25 lbs
1,1-Dichloroethane	1.18 lbs
1,2-Dichloroethane	0.03 lbs
Perchloroethylene	0.35 lbs
1,1-Dichloroethylene	0.08 lbs
Benzene	0.00 lbs
Vinyl Chloride[1]	0.00 lbs
Pentachlorophenol[2]	0.00 lbs

These emissions were obtained by estimating the total quantity of each species contained in the drainage swale area, and assuming that the entire quantity will eventually volatilize. The total contamination was calculated using the boring data presented by Wahler and Associates. The levels of contamination for the 2 deep boring and 8 shallow boring sites that showed detectable quantities of the indicator contaminants, were used to estimate the total contamination. Since the area of significant contamination is centered on a very small volume of soil around the drainage pipe exit, indicator chemicals that were not detected in this area (namely benzene, vinyl chloride, and pentachlorophenol) or elsewhere in the swale are not considered to exist in significant quantities to impact the risk. Each boring site

(1) Vinyl chloride is an extremely volatile chemical (it's boiling point is lower than that of sulfur dioxide), therefore it will evaporate out of rainwater or soil very quickly. Therefore, vinyl chloride is not expected to be present in quantities that could contribute to any long term risk from the contaminated soils and (as expected) was not detected in any of the borings samples from the swale.

(2) Pentachlorophenol, which was not detected in any of the soil borings in the swale, is a solid at ambient soil temperatures (pentachlorophenol has a melting point of 191 degrees Centigrade); therefore no mechanism for pentachlorophenol to contribute to the air inhalation pathway risk from soil contamination exists.

was assigned an applicable area where the level of contamination is assumed to be similar. The determination of these areas takes the other boring sites, contamination levels, and swale topography into account. The levels of contamination for the shallow boring sites is assumed to be confined to soil depths of 2 to 6 feet. Data from the deep boring sites indicated that the contamination of the chemicals in question are not found in soil deeper than six feet except around the drainage pipe "hot spot". For these reasons, the cross-sectional area of contamination in the deeper soil tests for boring locations B-8 and B-9 are assumed to increase beyond a depth of 3-4 feet to account for spreading of the hot spot contamination over a larger area than surface testing indicates. This assumption was used to estimate the deep soil contamination near the hot spot. The assumptions used to calculate the total mass contamination for each of the six chemicals and a sample calculation are presented in Table 1. The calculated mass of each chemical found at the boring sites are presented in Table 2. The detected amounts of each chemical at each applicable boring site are given in Table 3.

TABLE I
MASS CONTAMINATION CALCULATION ASSUMPTIONS

Boring Location	Applicable Contamination Area (sq ft)	Depth (ft)
SB-1(shallow boring)	56	2-6
SB-2	72	2-6
SB-3	36	2-6
SB-4	36	2-6
SB-5	N/A	N/A
SB-6	N/A	N/A
SB-7	200	2-6
SB-8	N/A	N/A
SB-9	800	2-6
SB-10	200	2-6
SB-11	N/A	N/A
SB-12	200	2-6
SB-13	N/A	N/A
SB-14	N/A	N/A
SB-15	N/A	N/A
B-8(1)(deep boring)	36	2-4
B-8(2)	50	4-8
B-8(3)	50	8-12
B-8(4)	50	2-18
B-8(5)	50	18-22
B-9(1)	36	1-3
B-9(2)	50	3-5
B-9(3)	50	5-9
B-9(4)	50	9-13
B-9(5)	50	13-19
B-9(6)	50	19-22
B-10	N/A	N/A
B-11	N/A	N/A
B-12	N/A	N/A

N/A - designates a site where no contamination of the indicator chemicals were found although for most of these sites organic contamination was found.

SAMPLE CALCULATION

Assumed soil density = 90 lbs/cu ft

For boring B-8(1) - Methylene chloride:

(36 sq ft)(2 ft depth)(90 lbs/sq ft)(3400 parts/1,000,000)

= 22.03 lbs

TABLE 2 – JASCO PLANT RAINWATER RUNOFF SWALE SOIL CONTAMINATION SUMMARY (1)

Boring Site Designation	Boring Site Area Pollutant Contamination (lbs)					
	Methylene Chloride	Trichloro-ethylene	1,1 Dichloro-ethane	Perchloro-ethylene	1,1 Dichloro-ethylene	1,2 Dichloro-ethane
B-8(1)	22.03	3.18	0.17	0.10	0.08	0.03
B-8(2)	43.20	----	0.61	0.12	----	----
B-8(3)	1.28	0.02	0.02	0.01	----	----
B-8(4)	0.24	0.00	0.01	----	----	----
B-8(5)	0.32	----	0.01	----	----	----
B-9(1)	0.06	----	0.00	----	----	----
B-9(2)	0.38	0.01	0.04	0.01	----	----
B-9(3)	0.38	0.03	0.02	0.02	----	----
B-9(4)	0.14	----	0.01	----	----	----
B-9(5)	0.43	----	----	----	----	----
B-9(6)	0.20	----	----	----	----	----
SB-1	0.03	----	0.01	----	----	----
SB-2	0.04	----	0.04	----	----	----
SB-3	2.72	----	----	----	----	----
SB-4	0.83	0.01	0.02	0.01	----	----
SB-7	----	----	0.01	0.01	----	----
SB-9	1.79	----	0.18	0.07	----	----
SB-10	0.43	----	0.03	----	----	----
SB-12	0.05	----	----	----	----	----
Totals	74.55	3.25	1.18	0.35	0.08	0.03

(1) A "----" designates that the chemical was not detected at that sampling location. Benzene, vinyl chloride and pentachlorophenol were not detected in any of the swale soil bore samples.

TABLE 3 - JASCO PLANT RAINWATER RUNOFF SWALE SOIL SAMPLING SUMMARY (1)

Boring Site Designation (2)	Boring Site Contamination Concentration (ppm by weight)					
	Methylene Chloride	Trichloro-ethylene	1,1 Dichloro-ethane	Perchloro-ethylene	1,1 Dichloro-ethylene	1,2 Dichloro-ethane
B-8(1)	3400	490	27	16	13	3.9
B-8(2)	2400	----	34	6 7	----	----
B-8(3)	71	0.85	0.98	0.31	----	----
B-8(4)	8.9	0.088	0.2	----	----	----
B-8(5)	18	----	0.76	----	----	----
B-9(1)	9.3	----	0.16	----	----	----
B-9(2)	42	1.4	2.2	0.87	----	----
B-9(3)	21	1.5	0.68	1.3	----	----
B-9(4)	7.4	----	0.23	----	----	----
B-9(5)	16	----	----	----	----	----
B-9(6)	15	----	----	----	----	----
SB-1	1.3	----	0.54	----	----	----
SB-2	1.7	----	1.4	----	----	----
SB-3	210	----	----	----	----	----
SB-4	64	0.56	1.2	1	----	----
SB-7	----	----	0.16	0.21	----	----
SB-9	6.2	----	0.61	0.24	----	----
SB-10	6	----	0.36	----	----	----
SB-12	0.68	----	----	----	----	----

(1) Concentrations are given as reported in "Soils Characterization Report and Runoff Management Plan" and "Evaluation of Interim Remedial Alternatives" reports prepared by Wahler Associates in August and June of 1988, respectively. A "----" designates that the chemical was not detected at that sampling location. Benzene, vinyl chloride and pentachlorophenol were not detected in any of the swale soil boring samples.

(2) Soil boring site locations B-10, B-11, B-12, SB-5, SB-6, SB-8, SB-11, SB-13, SB-14 and SB-15 are not presented because no detectable amounts of any indicator chemicals were found at those sites.

Air Concentration Estimates

Ambient air concentrations for each contaminant were estimated using the Level 1 Screening Analysis procedure presented in *Air Toxics Source Assessment Manual for California Air Pollution Control Districts* (EPA, 1986). The Level 1 Screening Analysis is a simple, conservative hand calculation used to estimate worst case 1-hour concentrations from non-buoyant sources. The procedure is as follows:

$$Xu / Q = 0.04541\ H^{-1.511}$$

Where,

X = 1-hour concentration (g/m^3)

u = wind speed (m/sec)

Q = emission rate (g/sec)

H = height of release (m)

A release height of H = 1 meter and a wind speed of u = 1 m/sec were assumed. The results were multiplied by 10^6 to obtain ug/m^3 and by an uncertainty factor of 2. This yields

$$X = (0.04541)(Q)(10^6)(2)$$
$$= (9.082 \times 10^4)(Q)$$

where

X = maximum predicted 1-hour concentration (ug/m^3)

Annual average concentrations were derived from the worst case 1-hour estimates by applying a conversion factor of 0.1. This methodology does not distinguish between on-site and off-site receptors; for a ground level release the results would be applicable immediately downwind. The dispersion treatment is quite conservative and would tend to overestimate actual off-site impacts. A summary of emission estimates along with predicted maximum annual concentrations for each contaminant are listed in Table 4.

Health Risk Assessment

The modeling results presented in the previous section were used to evaluate the potential for adverse health effects resulting from volatilization of soil contaminants in the drainage swale area. It was assumed that only the inhalation pathway could result in a significant exposure. Only long-term (chronic) health effects were evaluated.

The theoretical upper-bound estimate of increased lifetime cancer risk was calculated by multiplying the annual average concentration by the appropriate unit risk value. This represents the risk an individual could expect from exposure to the emissions over his or her lifetime (70 years).

A unit risk value is a measure of a substance's carcinogenic potency. The value is defined as the estimated probability of a person contracting cancer as the result of constant exposure to an ambient concentration of 1 ug/m^3 over a 70-year period.

The upper-bound incremental cancer risks for each potential carcinogen at the point of highest concentration are shown in Table 4. The total upper-bound estimate of lifetime risk is calculated by summing the upper-bound estimates for each compound. The total upper-bound incremental lifetime risk at the point of maximum concentration is 5.8×10^{-7}.

Conclusion

The analysis indicates that exposure to air emissions resulting from contaminated soil in the drainage area would not pose a significant chronic health risk to the surrounding residents and worker population. This conclusion is based on the conservative nature of the analysis as evidenced by (1) the assumption that all organics contained in the soil would volatilize as opposed to a portion diffusing downward; (2) the conservative nature of the dispersion methodology used to estimate maximum 1-hour air concentrations; and (3) the use of the 0.1 factor to derive the maximum annual concentration from the 1-hour value as opposed to using historical meteorological data (i.e., San Francisco Airport).

The prime uncertainty of this analysis is the mass emission estimates which were based on maximum historical monitoring data. It is possible that additional

TABLE 4 SUMMARY OF AIR INHALATION RISK ANALYSIS

Compound	70-Year Average Emission Rate (g/sec)	Annual Concentration (ug/m^3)	Unit Risk Factor(1)	Risk(2)
Methylene Chloride	1.53×10^{-5}	0.14	4.1×10^{-6}	5.7×10^{-7}
Trichloroethylene	6.68×10^{-7}	0.006	1.3×10^{-6}	7.8×10^{-9}
1,1 Dichloroethane	2.42×10^{-7}	0.002	---	---
Perchloroethylene	7.20×10^{-8}	0.0007	5.8×10^{-7}	4.1×10^{-10}
1,1-Dichloroethylene	1.65×10^{-8}	0.0001	5.0×10^{-5}	5.0×10^{-9}
1,2 Dichloroethane	6.17×10^{-9}	0.00006	---	---
Benzene(3)	0	0	8.3×10^{-6}	0
Vinyl Chloride(3)	0	0	2.5×10^{-6}	0
Pentachlorophenol(3)	0	0	---	---
TOTAL				5.8 X 10-7

(1) Unit risk factors from Table 3.15 of *Air Toxics Source Assessment Manual for California Air Pollution Control Districts*". Submitted to USEPA Region IX 10/8/86. Prepared by Engineering Science. Unit risk factors for 1,1 dichloroethylene, 1,2 dichloroethane, and benzene are from the Integrated Risk Information System (IRIS) database 1989.

(2) Total Lifetime risk in additional cancer deaths per 1,000,000 effected population is the Annual Concentration times the Unit Risk Factor.

(3) No emissions of these chemicals are assumed to occur from the contaminated soils in the swale.

monitoring could resolve a higher "hot spot" than the present analysis assumed. It is also possible that indicator chemicals may exist in levels below the detection limit throughout the area of the swale. However, it is doubtful that emissions were underestimated to the degree necessary to change the conclusion of this analysis.

ATTACHMENT 1
DISPERSION AND RISK CALCULATIONS[1]

1. Estimate emission rate in g/sec assuming all contaminants volatilize over a 70 year period.[2]

   Methylene chloride

   Q= (74.55 lb)(454g/lb)/[(70yr)(8,760 hr/yr)(3,600 sec/hr)] = 1.53×10^{-5} g/sec

   Similarly,

Trichloroethylene	3.25 lb/70 yr = 6.68×10^{-7} g/sec
1,1-Dichloroethane	1.18 lb/70 yr = 2.42×10^{-7} g/sec
Perchloroethylene	0.35 lb/70 yr = 7.20×10^{-8} g/sec
1,1-Dichloroethylene	0.08 lb/70 yr = 1.65×10^{-8} g/sec
1,2-Dichloroethane	0.03 lb/70 yr = 6.17×10^{-9} g/sec

2. Determine annual average concentration for each contaminant.

   Xann = (9.082×10^{4})(Q)(0.1)

   Methylene chloride

   Xann = $(9.082 \times 10^{4})(1.53 \times 10^{-5})(0.1)$ = 0.14 ug/m^3

   Similarly,

Trichloroethylene	0.006 ug/m^3
1,1-Dichloroethane	0.002 ug/m^3
Perchloroethylene	0.0007 ug/m^3
1,1-Dichloroethylene	0.0001 ug/m^3
1,2-Dichloroethane	0.00006 ug/m^3

---

(1) No emissions of benzene, vinyl chloride, and pentachlorophenol are assumed to occur from the contaminated soil in the swale.

(2) Assuming that the contaminants volatilize over a shorter time period would not change the risk estimate since the exposure term in the risk calculation would also decrease.

3. Estimate increased lifetime cancer risk by multiplying the average annual concentration by the unit risk value.

Methylene chloride

$$\text{Risk} = (0.14)(4.1 \times 10^{-6}) = 5.7 \times 10^{-7}$$

Trichloroethylene

$$\text{Risk} = (0.006)\ (1.3 \times 10^{-6}) = 7.8 \times 10^{-9}$$

Perchloroethylene

$$\text{Risk} = (0.0007)\ (5.0 \times 10^{-7}) = 5.0 \times 10^{-10}$$

1,1-Dichloroethylene

$$\text{Risk} = (0.0001)\ (5.0 \times 10^{-5}) = 5.0 \times 10^{-9}$$

1,2-Dichloroethane

$$\text{Risk} = (0.00006)(2.6 \times 10^{-5}) = 1.6 \times 10^{-9}$$

No unit risk factor exists for 1,1-Dichloroethane.

$$\text{Total Risk} = 5.8 \times 10^{-7}$$

POTENTIAL CHRONIC AND SUBCHRONIC DAILY INTAKE TABLES

TABLE D-1
POTENTIAL CHRONIC AND SUBCHRONIC DAILY INTAKE
(GROUND WATER INGESTION)
ADULT RESIDENTS

	Chronic (mg/kg/day)		Subchronic (mg/kg/day)	
Indicator Contaminant	Best Estimate(a)	Maximum Plausible(b)	Best Estimate(c)	Maximum Plausible(d)
1,2 DCA	4.4×10^{-3}	4.9×10^{-3}	4.4×10^{-3}	4.6×10^{-1}
1,1 DCE	1.4×10^{-3}	1.6×10^{-3}	1.4×10^{-3}	9.4×10^{-2}
TCE	2.5×10^{-2}	2.8×10^{-2}	2.5×10^{-2}	3.5
Vinyl Chloride	8.1×10^{-5}	9.0×10^{-5}	8.1×10^{-5}	2.8×10^{-3}
Benzene	4.9×10^{-4}	5.5×10^{-4}	4.9×10^{-4}	2.1×10^{-2}
Tetrachloroethylene	1.5×10^{-3}	1.7×10^{-3}	1.5×10^{-3}	1.2×10^{-1}
Methylene Chloride	1.8×10^{-1}	2.0×10^{-1}	1.8×10^{-1}	25.0
1,1 DCA	5.2×10^{-3}	5.8×10^{-3}	5.2×10^{-3}	3.8×10^{-1}
PCP	2.1×10^{-4}	2.4×10^{-4}	2.1×10^{-4}	9×10^{-3}

(a) Chronic daily intake (CDI): average concentrations x human intake factor (2.6×10^{-2} mg/kg/day).
(b) CDI: average concentrations x human intake factor (2.9×10^{-2} mg/kg/day).
(c) Subchronic Daily Intake (SDI): average concentration values x human intake factor (2.6×10^{-2} mg/kg/day).
(d) SDI: high concentraton values x human intake factor (2.9×10^{-2} mg/kg/day).

TABLE D-2

POTENTIAL SUBCHRONIC DAILY INTAKE

GROUND WATER INGESTION

CHILDREN

	Subchronic (mg/kg/day)	
Indicator Contaminant	Best Estimate(a)	Maximum Plausible(a)
1,2-DCA	1.0×10^{-2}	9.4×10^{-1}
1,1-DCE	3.2×10^{-3}	1.9×10^{-1}
TCE	5.7×10^{-2}	7.1
Vinyl Chloride	1.8×10^{-4}	5.8×10^{-3}
Benzene	1.1×10^{-3}	4.3×10^{-2}
Tetrachloroethylene	3.4×10^{-3}	2.5×10^{-1}
Methylene Chloride	4.0×10^{-1}	51
1,1-DCA	1.2×10^{-2}	7.6×10^{-1}
PCP	4.8×10^{-4}	1.8×10^{-2}

(a) Subchronic Daily Intake (SDI): average concentration values x human intake factor (5.9×10^{-2} mg/kg/day)

(b) SDI: high concnetration value x human intake factor (5.9×10^{-2} mg/kg/day)

TABLE D-3
POTENTIAL CHRONIC AND SUBCHRONIC DAILY INTAKE
(SOIL INGESTION)
ADULT RESIDENTS

	Chronic (mg/kg/day)		Subchronic (mg/kg/day)	
Indicator Contaminant	Best Estimate(a)	Maximum Plausible(b)	Best Estimate(c)	Maximum Plausible(d)
1,2 DCA	8.2×10^{-8}	4.1×10^{-7}	6.7×10^{-8}	4.1×10^{-6}
1,1 DCE	1.8×10^{-7}	9.0×10^{-7}	1.5×10^{-7}	1.5×10^{-5}
TCE	5.3×10^{-6}	2.7×10^{-8}	4.4×10^{-6}	4.9×10^{-4}
Vinyl Chloride	4.1×10^{-8}	2.1×10^{-7}	3.4×10^{-8}	2.1×10^{-7}
Benzene	8.0×10^{-8}	4.0×10^{-6}	6.6×10^{-8}	3.3×10^{-6}
Tetrachloroethylene	1.5×10^{-6}	7.4×10^{-6}	1.2×10^{-6}	6.6×10^{-5}
Methylene Chloride	3.9×10^{-7}	2.0×10^{-4}	3.2×10^{-7}	3.3×10^{-4}
1,1 DCA	9.8×10^{-7}	4.9×10^{-6}	8.1×10^{-7}	6.2×10^{-6}
PCP	8.2×10^{-8}	4.1×10^{-7}	6.7×10^{-8}	1.2×10^{-6}

(a) Chronic daily intake (CDI): average concentrations x human intake factor (8.2×10^{-7} $kg/kg_{bodyweight}/day$).
(b) CDI: average concentrations x human intake factor (4.1×10^{-6} $kg/kg_{bodyweight}/day$).
(c) Subchronic Daily Intake (SDI): average concentration values x human intake factor (8.2×10^{-7} $kg/kg_{bodyweight}/day$).
(d) SDI: high concentraton values x human intake factor (4.1×10^{-6} $kg/kg_{bodyweight}/day$).

TABLE D-4
POTENTIAL SUBCHRONIC DAILY INTAKE
(SOIL INGESTION)
CHILDREN

Indicator Contaminant	Subchronic (mg/kg/day) Best Estimate(a)	Maximum Plausible(b)
1,2 DCA	8.4×10^{-8}	6.6×10^{-6}
1,1 DCE	1.8×10^{-7}	2.4×10^{-5}
TCE	5.5×10^{-6}	8.0×10^{-4}
Vinyl Chloride	4.2×10^{-8}	3.4×10^{-7}
Benzene	8.2×10^{-8}	5.4×10^{-6}
Tetrachloroethylene	1.5×10^{-6}	1.1×10^{-4}
Methylene Chloride	4.0×10^{-7}	5.4×10^{-4}
1,1 DCA	1.0×10^{-6}	1.0×10^{-5}
PCP	8.4×10^{-8}	2.0×10^{-6}

(a) Subchronic Daily Intake (SDI): average concentration values x human intake factor (8.4×10^{-7} $kg/kg_{bodyweight}/day$).

(b) SDI: high concentration values x human intake factor (6.7×10^{-6} $kg/kg_{bodyweight}/day$).

TABLE D-5
POTENTIAL SUBCHRONIC DAILY INTAKE
(SOIL INGESTION)
CONSTRUCTION WORKERS

Indicator Contaminant	Subchronic (mg/kg/day) Best Estimate(a)	Maximum Plausible(b)
1,2 DCA	2.0×10^{-7}	5.0×10^{-6}
1,1 DCE	4.4×10^{-7}	1.8×10^{-5}
TCE	1.3×10^{-5}	6.1×10^{-4}
Vinyl Chloride	1.0×10^{-7}	2.6×10^{-7}
Benzene	2.0×10^{-7}	4.1×10^{-6}
Tetrachloroethylene	3.6×10^{-6}	8.2×10^{-5}
Methylene Chloride	9.6×10^{-5}	4.1×10^{-4}
1,1 DCA	2.4×10^{-6}	7.7×10^{-6}
PCP	2.0×10^{-7}	1.5×10^{-6}

(a) Subchronic Daily Intake (SDI): average concentration values x human intake factor (2.0×10^{-6} kg/$kg_{bodyweight}$/day)
(b) SDI: high concentration values x human intake factor (5.1×10^{-6} kg/$kg_{bodyweight}$/day).

TABLE D-6
POTENTIAL CHRONIC AND SUBCHRONIC DAILY INTAKE
(PARTICULATE INHALATION)
ADULT RESIDENTS

Indicator Contaminant	Chronic (mg/kg/day) Best Estimate(a)	Chronic (mg/kg/day) Maximum Plausible(b)	Subchronic (mg/kg/day) Best Estimate(c)	Subchronic (mg/kg/day) Maximum Plausible(d)
1,2 DCA	6.2×10^{-10}	1.6×10^{-9}	1.2×10^{-9}	3.2×10^{-8}
1,1 DCE	1.4×10^{-9}	3.5×10^{-9}	2.2×10^{-8}	1.2×10^{-7}
TCE	4.0×10^{-8}	1.0×10^{-7}	7.8×10^{-8}	3.8×10^{-6}
Vinyl Chloride	3.1×10^{-10}	8.0×10^{-9}	6.0×10^{-10}	1.6×10^{-9}
Benzene	6.1×10^{-10}	1.6×10^{-9}	1.2×10^{-9}	2.6×10^{-8}
Tetrachloroethylene	1.1×10^{-8}	2.9×10^{-8}	2.2×10^{-8}	5.1×10^{-7}
Methylene Chloride	3.0×10^{-7}	7.7×10^{-7}	5.8×10^{-7}	2.6×10^{-6}
1,1 DCA	7.4×10^{-9}	1.9×10^{-8}	1.4×10^{-8}	4.8×10^{-8}
PCP	6.2×10^{-10}	1.6×10^{-9}	1.2×10^{-9}	9.6×10^{-9}

(a) Chronic daily intake (CDI): average concentrations x human intake factor (6.2×10^{-9} $kg/kg_{bodyweight}$/day).
(b) CDI: average concentrations x human intake factor (1.6×10^{-8} $kg/kg_{bodyweight}$/day).
(c) Subchronic Daily Intake (SDI): average concentration values x human intake factor (1.2×10^{-8} $kg/kg_{bodyweight}$/day).
(d) SDI: high concentraton values x human intake factor (3.2×10^{-8} $kg/kg_{bodyweight}$/day).

TABLE D-7
POTENTIAL SUBCHRONIC DAILY INTAKE
(PARTICULATE INHALATION)
CHILDREN

Indicator Contaminant	Subchronic (mg/kg/day Best Estimate(a)	Maximum Plausible(b)
1,2 DCA	4.7×10^{-9}	2.0×10^{-7}
1,1 DCE	1.0×10^{-8}	7.2×10^{-7}
TCE	3.1×10^{-7}	2.4×10^{-5}
Vinyl Chloride	2.4×10^{-9}	1.0×10^{-8}
Benzene	4.6×10^{-9}	1.6×10^{-7}
Tetrachloroethylene	8.5×10^{-8}	3.2×10^{-6}
Methylene Chloride	2.3×10^{-6}	1.6×10^{-5}
1,1 DCA	5.6×10^{-8}	3.0×10^{-7}
PCP	4.7×10^{-9}	6.0×10^{-8}

(a) Subchronic Daily Intake (SDI): average concentration values x human intake factor (4.7×10^{-8} $kg/kg_{bodyweight}$/day)
(b) SDI: high concentration values x human intake factor (2.0×10^{-7} $kg/kg_{bodyweight}$/day).

TABLE D-8
POTENTIAL SUBCHRONIC DAILY INTAKE
(PARTICULATE INHALATION)
CONSTRUCTION WORKERS

Indicator Contaminant	Subchronic (mg/kg/day) Best Estimate(a)	Maximum Plausible(b)
1,2 DCA	3.1×10^{-9}	4.0×10^{-8}
1,1 DCE	6.8×10^{-9}	1.4×10^{-7}
TCE	2.0×10^{-7}	4.8×10^{-6}
Vinyl Chloride	1.6×10^{-9}	2.0×10^{-9}
Benzene	3.0×10^{-9}	3.2×10^{-8}
Tetrachloroethylene	5.6×10^{-8}	6.4×10^{-7}
Methylene Chloride	1.5×10^{-6}	3.2×10^{-6}
1,1 DCA	3.7×10^{-8}	6.0×10^{-8}
PCP	3.1×10^{-9}	1.2×10^{-8}

(a) Subchronic Daily Intake (SDI): average concentration values x human intake factor (3.1×10^{-8} $kg/kg_{bodyweight}$/day)
(b) SDI: high concentration values x human intake factor (4.0×10^{-8} $kg/kg_{bodyweight}$/day).

TABLE D-9
POTENTIAL CHRONIC AND SUBCHRONIC DAILY INTAKE
(INHALATION OF VAPORS WHILE SHOWERING)
ADULT RESIDENTS

Indicator Contaminant	Chronic (mg/kg/day) Best Estimate(a)	Chronic (mg/kg/day) Maximum Plausible(b)	Subchronic (mg/kg/day) Best Estimate(c)	Subchronic (mg/kg/day) Maximum Plausible(d)
1,2 DCA	$2.2 X 10^{-4}$	$5.3 X 10^{-4}$	$2.0 X 10^{-2}$	$4.9 X 10^{-2}$
1,1 DCE	$7.0 X 10^{-5}$	$1.7 X 10^{-4}$	$4.3 X 10^{-3}$	$1.0 X 10^{-2}$
TCE	$1.3 X 10^{-3}$	$3.0 X 10^{-3}$	$1.7 X 10^{-1}$	$3.7 X 10^{-1}$
Vinyl Chloride	$4.0 X 10^{-6}$	$1.0 X 10^{-5}$	$1.3 X 10^{-4}$	$3.0 X 10^{-4}$
Benzene	$2.0 X 10^{-5}$	$6.0 X 10^{-5}$	$9.5 X 10^{-4}$	$2.3 X 10^{-3}$
Tetrachloroethylene	$8.0 X 10^{-5}$	$1.8 X 10^{-4}$	$5.6 X 10^{-3}$	$1.3 X 10^{-2}$
Methylene Chloride	$8.8 X 10^{-3}$	$2.1 X 10^{-2}$	1.1	2.7
1,1 DCA	$2.6 X 10^{-4}$	$6.2 X 10^{-4}$	$1.7 X 10^{-2}$	$4.0 X 10^{-2}$
PCP	$1.1 X 10^{-5}$	$2.5 X 10^{-5}$	$4.0 X 10^{-4}$	$9.6 X 10^{-4}$

(a) Chronic daily intake (CDI): average concentrations x human intake factor (1.3×10^{-3} m^3/kg/day).
(b) CDI: average concentrations x human intake factor (3.1×10^{-3} m^3/kg/day).
(c) Subchronic Daily Intake (SDI): high concentration values x human intake factor (1.3×10^{-3} m^3/kg/day).
(d) SDI: high concentraton values x human intake factor (3.1×10^{-3} m^3/kg/day).

HAZARD INDICES AND POTENTIAL CANCER RISK TABLES

TABLE E-1
COMPARISON OF CHRONIC DAILY INTAKE (CDI) OF NON-CARCINOGENS
WITH ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
GROUND WATER INGESTION
(ADULT RESIDENT)

Indicator Contaminant	AIC (mg/kg/day)	CDI (mg/kg/day) Best Estimate	CDI (mg/kg/day) Maximum Plausible	CDI:AIC (mg/kg/day) Best Estimate	CDI:AIC (mg/kg/day) Maximum Plausible
1,2 DCA	---	4.4×10^{-3}	4.9×10^{-3}	---	---
1,1 DCE	9.0×10^{-3}	1.4×10^{-3}	1.6×10^{-3}	1.6×10^{-1}	1.8×10^{-1}
TCE	---	2.5×10^{-2}	2.8×10^{-2}	---	---
Vinyl Chloride	---	8.1×10^{-5}	9.0×10^{-5}	---	---
Benzene	---	4.9×10^{-4}	5.5×10^{-4}	---	---
Tetrachloroethylene	1.0×10^{-2}	1.5×10^{-3}	1.7×10^{-4}	1.5×10^{-3}	1.7×10^{-1}
Methylene Chloride	6.00×10^{-2}	1.8×10^{-1}	2.0×10^{-1}	3.0	3.3
1,1 DCA	1.0×10^{-1}	5.2×10^{-3}	5.8×10^{-3}	5.2×10^{-2}	5.8×10^{-2}
PCP	3.0×10^{-2}	2.1×10^{-4}	2.4×10^{-4}	7.0×10^{-3}	8.0×10^{-3}
Total				3.2	3.7

TABLE E-2
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
GROUND WATER INGESTION
(ADULT RESIDENT)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	4.4×10^{-3}	4.6×10^{-1}	---	---
1,1 DCE	9.0×10^{-3}	1.4×10^{-3}	9.4×10^{-2}	1.6×10^{-1}	1.1×10^{1}
TCE	---	2.5×10^{-2}	3.5	---	---
Vinyl Chloride	---	8.1×10^{-5}	2.8×10^{-3}	---	---
Benzene	---	4.9×10^{-4}	2.1×10^{-2}	---	---
Tetrachloroethylene	1.0×10^{-2}	1.5×10^{-3}	1.3×10^{-1}	1.5×10^{-1}	1.3×10^{1}
Methylene Chloride	6.0×10^{-2}	1.8×10^{-1}	25	3.0	4.2×10^{2}
1,1 DCA	1.0	5.2×10^{-3}	3.8×10^{-1}	5.2×10^{-3}	3.8×10^{-1}
PCP	3.0×10^{-2}	2.1×10^{-4}	9.0×10^{-3}	7.0×10^{-3}	3.0×10^{-1}
Total				3.3	440

TABLE E-3
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
GROUND WATER INGESTION
(CHILDREN)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	1.0×10^{-2}	9.4×10^{-1}	---	---
1,1 DCE	9.0×10^{-3}	3.3×10^{-3}	1.9×10^{-1}	3.6×10^{-1}	2.1×10^{1}
TCE	---	5.7×10^{-2}	7.1	---	---
Vinyl Chloride	---	1.8×10^{-4}	5.8×10^{-3}	---	---
Benzene	---	1.1×10^{-3}	4.3×10^{-2}	---	---
Tetrachloroethylene	1.0×10^{-2}	3.4×10^{-3}	2.5×10^{-1}	3.4×10^{-1}	2.5×10^{1}
Methylene Chloride	6.0×10^{-2}	4.0×10^{-1}	51	6.7	850
1,1 DCA	1.0	1.2×10^{-2}	7.6×10^{-1}	1.2×10^{-2}	7.6×10^{-1}
PCP	3.0×10^{-2}	4.8×10^{-4}	1.8×10^{-2}	1.6×10^{-2}	6.0×10^{-1}
Total				8.0	896

TABLE E-4
COMPARISON OF CHRONIC DAILY INTAKE (CDI) OF NON-CARCINOGENS
WITH ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
INHALATION OF VAPORS WHILE SHOWERING
(ADULT RESIDENT)

Indicator Contaminant	AIC (mg/kg/day)	CDI (mg/kg/day) Best Estimate	CDI (mg/kg/day) Maximum Plausible	CDI:AIC (mg/kg/day) Best Estimate	CDI:AIC (mg/kg/day) Maximum Plausible
1,2 DCA	---	2.2×10^{-4}	5.3×10^{-4}	---	---
1,1 DCE	---	7.0×10^{-5}	1.7×10^{-4}	---	---
TCE	---	1.3×10^{-3}	3.0×10^{-3}	---	---
Vinyl Chloride	---	4.0×10^{-6}	1.0×10^{-5}	---	---
Benzene	---	2.0×10^{-5}	6.0×10^{-5}	---	---
Tetrachloroethylene	---	8.0×10^{-5}	1.8×10^{-4}	---	---
Methylene Chloride	9.0×10^{-1}	8.8×10^{-3}	2.1×10^{-2}	9.8×10^{-3}	2.3×10^{-2}
1,1 DCA	1.0×10^{-1}	2.6×10^{-4}	6.2×10^{-4}	2.6×10^{-3}	6.2×10^{-3}
PCP	---	1.1×10^{-5}	2.5×10^{-5}	---	---
Total				1.2×10^{-2}	2.9×10^{-2}

TABLE E-5
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
INHALATION OF VAPORS WHILE SHOWERING
(ADULT RESIDENT)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	2.0×10^{-2}	4.9×10^{-2}	---	---
1,1 DCE	---	4.3×10^{-3}	1.0×10^{-2}	---	---
TCE	---	1.7×10^{-1}	3.7×10^{-4}	---	---
Vinyl Chloride	---	1.3×10^{-4}	3.0×10^{-4}	---	---
Benzene	---	9.5×10^{-4}	2.3×10^{-3}	---	---
Tetrachloroethylene	---	5.6×10^{-3}	1.3×10^{-2}	---	---
Methylene Chloride	9.0×10^{-1}	1.1	2.7	1.2	3.0
1,1 DCA	1.0	1.7×10^{-2}	4.0×10^{-2}	1.7×10^{-2}	4.0×10^{-2}
PCP	---	4.0×10^{-4}	9.6×10^{-4}	---	---
Total				1.2	3.0

TABLE E-6
CALCULATION OF LIFETIME CANCER RISK
GROUND WATER INGESTION
(ADULT RESIDENT)

	CDI (mg/kg/day)		Carcinogenic Potency Factor $(mg/kg/day)^{-1}$	Lifetime Cancer Risk	
Indicator Contaminant	**Best Estimate**	**Maximum Plausible**		**Best Estimate**	**Maximum Plausible**
1,2 DCA	4.4×10^{-3}	4.9×10^{-3}	9.10×10^{-2}	4.0×10^{-4}	4.5×10^{-4}
1,1 DCE	1.4×10^{-3}	1.6×10^{-3}	6.0×10^{-1}	8.4×10^{-4}	9.6×10^{-4}
TCE	2.5×10^{-2}	2.8×10^{-2}	1.10×10^{-2}	2.8×10^{-4}	3.1×10^{-4}
Vinyl Chloride	8.1×10^{-5}	9.0×10^{-5}	2.30	1.9×10^{-4}	2.07×10^{-4}
Benzene	4.9×10^{-4}	5.5×10^{-4}	2.9×10^{-2}	1.4×10^{-5}	1.6×10^{-5}
Tetrachloroethylene	1.5×10^{-3}	1.7×10^{-4}	5.10×10^{-2}	7.7×10^{-5}	8.6×10^{-6}
Methylene Chloride	1.8×10^{-1}	2.0×10^{-1}	7.50×10^{-3}	1.4×10^{-3}	1.5×10^{-3}
1,1 DCA	5.2×10^{-3}	5.8×10^{-3}	9.1×10^{-2}	4.7×10^{-4}	5.3×10^{-4}
PCP	2.1×10^{-4}	9.0×10^{-3}	1.6×10^{-2}	3.4×10^{-6}	3.8×10^{-6}
Total				3.6×10^{-3}	4.0×10^{-3}

(1) Chronic Daily Intake.

TABLE E-7
CALCULATION OF LIFETIME CANCER RISK
INHALATION OF VAPORS WHILE SHOWERING
(ADULT RESIDENT)

	CDI(1) (mg/kg/day)		Carcinogenic Potency Factor $(mg/kg/day)^{-1}$	Lifetime Cancer Risk	
Indicator Contaminant	**Best Estimate**	**Maximum Plausible**		**Best Estimate**	**Maximum Plausible**
1,2 DCA	2.2×10^{-4}	5.3×10^{-4}	9.1×10^{-2}	2.0×10^{-5}	4.8×10^{-5}
1,1 DCE	7.0×10^{-5}	1.7×10^{-4}	1.2	8.4×10^{-5}	2.0×10^{-4}
TCE	1.3×10^{-3}	3.0×10^{-3}	1.3×10^{-2}	1.7×10^{-5}	3.9×10^{-5}
Vinyl Chloride	4.0×10^{-6}	1.0×10^{-5}	3.0×10^{-1}	1.2×10^{-6}	3.0×10^{-6}
Benzene	2.0×10^{-5}	6.0×10^{-5}	2.9×10^{-2}	5.8×10^{-7}	1.7×10^{-6}
Tetrachloroethylene	8.0×10^{-5}	1.8×10^{-4}	3.3×10^{-3}	2.6×10^{-7}	5.9×10^{-7}
Methylene Chloride	8.8×10^{-3}	2.1×10^{-2}	1.4×10^{-2}	1.2×10^{-4}	2.9×10^{-4}
1,1 DCA	2.6×10^{-4}	6.2×10^{-4}	9.1×10^{-2}	2.4×10^{-5}	5.6×10^{-5}
PCP	1.1×10^{-5}	2.5×10^{-5}	---	---	---
Total				2.7×10^{-4}	5.9×10^{-4}

(1) Chronic Daily Intake.

TABLE E-8
COMPARISON OF CHRONIC DAILY INTAKE (CDI) OF NON-CARCINOGENS
WITH ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
SOIL INGESTION
(ADULT RESIDENT)

Indicator Contaminant	AIC (mg/kg/day)	CDI (mg/kg/day) Best Estimate	CDI (mg/kg/day) Maximum Plausible	CDI:AIC (mg/kg/day) Best Estimate	CDI:AIC (mg/kg/day) Maximum Plausible
1,2 DCA	---	8.2×10^{-8}	4.1×10^{-7}	---	---
1,1 DCE	9.0×10^{-3}	1.8×10^{-7}	9.0×10^{-7}	2.0×10^{-5}	1.0×10^{-4}
TCE	---	5.3×10^{-6}	2.7×10^{-5}	---	---
Vinyl Chloride	---	4.1×10^{-8}	2.1×10^{-7}	---	---
Benzene	---	8.0×10^{-8}	4.0×10^{-7}	---	---
Tetrachloroethylene	1.0×10^{-2}	1.5×10^{-6}	7.4×10^{-6}	1.5×10^{-4}	7.4×10^{-4}
Methylene Chloride	6.0×10^{-2}	3.9×10^{-7}	2.0×10^{-4}	6.6×10^{-6}	3.3×10^{-3}
1,1 DCA	1.0×10^{-1}	9.8×10^{-7}	4.9×10^{-6}	9.8×10^{-6}	4.9×10^{-5}
PCP	3.0×10^{-2}	8.2×10^{-8}	4.1×10^{-7}	2.7×10^{-6}	1.4×10^{-5}
Total				8.4×10^{-4}	4.2×10^{-3}

TABLE E-9
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
SOIL INGESTION
(ADULT RESIDENTS)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	$6.7 X 10^{-8}$	$4.1 X 10^{-6}$	---	---
1,1 DCE	$9.0 X 10^{-3}$	$1.5 X 10^{-7}$	$1.5 X 10^{-5}$	$1.7 X10^{-5}$	$1.7 X 10^{-3}$
TCE	---	$4.4 X 10^{-6}$	$4.9 X 10^{-4}$	---	---
Vinyl Chloride	---	$3.4 X 10^{-8}$	$2.1 X 10^{-7}$	---	---
Benzene	---	$6.6 X 10^{-8}$	$3.3 X 10^{-6}$	---	---
Tetrachloroethylene	$1.0 X 10^{-2}$	$1.2 X 10^{-6}$	$6.6 X 10^{-5}$	$1.2 X 10^{-4}$	$6.6 X 10^{-3}$
Methylene Chloride	$6.0 X 10^{-2}$	$3.2 X 10^{-7}$	$3.3 X 10^{-4}$	$5.3 X 10^{-6}$	$5.5 X 10^{-3}$
1,1 DCA	1.00	$8.1 X 10^{-7}$	$6.2 X 10^{-6}$	$8.9 X 10^{-8}$	$4.6 X 10^{-7}$
PCP	$3.0 X 10^{-2}$	$6.7 X 10^{-8}$	$1.2 X 10^{-6}$	$2.2 X 10^{-6}$	$4.0 X 10^{-5}$
Total				$1.4 X 10^{-4}$	$1.4 X 10^{-2}$

TABLE E-10
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
SOIL INGESTION
(CHILDREN)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2-DCA	---	8.4×10^{-8}	6.6×10^{-6}	---	---
1,1 DCE	9.0×10^{-3}	1.8×10^{-7}	2.4×10^{-5}	2.0×10^{-5}	2.7×10^{-3}
TCE	---	5.5×10^{-6}	8.0×10^{-4}	---	---
Vinyl Chloride	---	4.2×10^{-8}	3.4×10^{-7}	---	---
Benzene	---	8.2×10^{-8}	5.4×10^{-6}	---	---
Tetrachloroethylene	1.0×10^{-2}	1.5×10^{-6}	1.1×10^{-4}	1.5×10^{-4}	1.1×10^{-2}
Methylene Chloride	6.0×10^{-2}	4.0×10^{-7}	5.4×10^{-4}	6.7×10^{-6}	9.0×10^{-3}
1,1 DCA	1.0	1.0×10^{-6}	1.0×10^{-5}	1.0×10^{-6}	1.0×10^{-5}
PCP	3.0×10^{-2}	8.4×10^{-8}	2.0×10^{-6}	2.8×10^{-6}	6.7×10^{-5}
Total				1.8×10^{-4}	2.3×10^{-2}

TABLE E-11
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
SOIL INGESTION
(CONSTRUCTION WORKER)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	2.0×10^{-7}	5.0×10^{-6}	---	---
1,1 DCE	9.0×10^{-3}	4.4×10^{-7}	1.8×10^{-5}	4.9×10^{-5}	2.0×10^{-3}
TCE	---	1.3×10^{-5}	6.1×10^{-4}	---	---
Vinyl Chloride	---	1.0×10^{-7}	2.6×10^{-7}	---	---
Benzene	---	2.0×10^{-7}	4.1×10^{-6}	---	---
Tetrachloroethylene	1.0×10^{-2}	3.6×10^{-6}	8.2×10^{-5}	3.6×10^{-4}	8.2×10^{-3}
Methylene Chloride	6.0×10^{-2}	9.6×10^{-5}	4.1×10^{-4}	1.6×10^{-3}	6.8×10^{-3}
1,1 DCA	1.0	2.4×10^{-6}	7.7×10^{-6}	2.4×10^{-6}	7.7×10^{-6}
PCP	3.0×10^{-2}	2.0×10^{-7}	1.53×10^{-6}	4.0×10^{-8}	3.2×10^{-7}
Total				2.0×10^{-3}	1.7×10^{-2}

TABLE E-12
CALCULATION OF LIFETIME CANCER RISK
SOIL INGESTION
(ADULT RESIDENT)

Indicator Contaminant	CDI(1) (mg/kg/day) Best Estimate	Maximum Plausible	Carcinogenic Potency Factor $(mg/kg/day)^{-1}$	Lifetime Cancer Risk Best Estimate	Maximum Plausible
1,2 DCA	8.2×10^{-8}	4.1×10^{-7}	9.10×10^{-2}	7.5×10^{-9}	3.7×10^{-8}
1,1 DCE	1.8×10^{-7}	9.0×10^{-7}	6.0×10^{-1}	1.1×10^{-7}	5.4×10^{-7}
TCE	5.3×10^{-6}	2.7×10^{-5}	1.10×10^{-2}	5.9×10^{-8}	2.9×10^{-7}
Vinyl Chloride	4.1×10^{-8}	2.1×10^{-7}	2.30	9.4×10^{-8}	4.7×10^{-7}
Benzene	8.0×10^{-8}	4.0×10^{-7}	2.9×10^{-2}	2.3×10^{-9}	1.2×10^{-8}
Tetrachloroethylene	1.5×10^{-6}	7.4×10^{-6}	5.10×10^{-2}	7.5×10^{-8}	3.8×10^{-7}
Methylene Chloride	3.9×10^{-5}	2.0×10^{-4}	7.5×10^{-3}	3.0×10^{-7}	1.5×10^{-6}
1,1 DCA	9.8×10^{-7}	4.9×10^{-6}	9.1×10^{-2}	9.0×10^{-9}	4.5×10^{-7}
PCP	8.2×10^{-8}	4.1×10^{-7}	1.6×10^{-2}	1.3×10^{-9}	4.5×10^{-7}
Total				7.3×10^{-7}	3.7×10^{-6}

(1) Chronic Daily Intake.

TABLE E-13
COMPARISON OF CHRONIC DAILY INTAKE (CDI) OF NON-CARCINOGENS
WITH ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
PARTICULATE INHALATION
(ADULT RESIDENT)

Indicator Contaminant	AIC (mg/kg/day)	CDI (mg/kg/day) Best Estimate	CDI (mg/kg/day) Maximum Plausible	CDI:AIC (mg/kg/day) Best Estimate	CDI:AIC (mg/kg/day) Maximum Plausible
1,2 DCA	---	6.2×10^{-10}	1.6×10^{-9}	---	---
1,1 DCE	---	1.4×10^{-9}	3.5×10^{-9}	---	---
TCE	---	4.0×10^{-8}	1.0×10^{-7}	---	---
Vinyl Chloride	---	3.1×10^{-10}	8.0×10^{-10}	---	---
Benzene	---	6.1×10^{-10}	1.6×10^{-9}	---	---
Tetrachloroethylene	---	1.1×10^{-8}	2.9×10^{-8}	---	---
Methylene Chloride	9.0×10^{-1}	3.0×10^{-7}	7.7×10^{-7}	3.3×10^{-7}	8.6×10^{-7}
1,1 DCA	1.0×10^{-1}	7.4×10^{-9}	1.9×10^{-8}	7.4×10^{-8}	1.9×10^{-7}
PCP	---	6.2×10^{-10}	1.6×10^{-9}	---	---
Total				4.0×10^{-7}	1.1×10^{-6}

TABLE E-14
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
PARTICULATE INHALATION
(ADULT RESIDENT)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	1.2×10^{-9}	3.2×10^{-8}	---	---
1,1 DCE	---	2.6×10^{-9}	1.2×10^{-7}	---	---
TCE	---	7.8×10^{-8}	3.8×10^{-6}	---	---
Vinyl Chloride	---	6.0×10^{-10}	1.6×10^{-9}	---	---
Benzene	---	1.2×10^{-9}	2.6×10^{-8}	---	---
Tetrachloroethylene	---	2.2×10^{-8}	5.1×10^{-8}	---	---
Methylene Chloride	9.0×10^{-1}	5.8×10^{-7}	2.6×10^{-6}	6.4×10^{-7}	2.9×10^{-6}
1,1 DCA	1.0	1.4×10^{-8}	4.8×10^{-8}	1.4×10^{-8}	4.8×10^{-8}
PCP	---	1.2×10^{-9}	9.6×10^{-9}	---	---
Total				6.5×10^{-7}	2.9×10^{-6}

TABLE E-15
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
PARTICULATE INHALATION
(CHILDREN)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	4.7×10^{-9}	2.0×10^{-7}	---	---
1,1 DCE	---	1.0×10^{-8}	7.2×10^{-7}	---	---
TCE	---	3.1×10^{-7}	2.4×10^{-5}	---	---
Vinyl Chloride	---	2.4×10^{-9}	1.0×10^{-8}	---	---
Benzene	---	4.6×10^{-9}	1.6×10^{-7}	---	---
Tetrachloroethylene	---	8.5×10^{-8}	1.6×10^{-5}	---	---
Methylene Chloride	9.0×10^{-1}	2.3×10^{-6}	1.6×10^{-5}	2.6×10^{-6}	1.8×10^{5}
1,1 DCA	1.0	5.1×10^{-8}	3.0×10^{-7}	5.1×10^{-8}	3.0×10^{-7}
PCP	---	4.7×10^{-9}	6.0×10^{-8}	---	---
Total				2.6×10^{-6}	1.8×10^{-5}

TABLE E-16
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
PARTICULATE INHALATION
(CONSTRUCTION WORKERS)

Indicator Contaminant	AIS (mg/kg/day)	SDI (mg/kg/day) Best Estimate	SDI (mg/kg/day) Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	SDI:AIS (mg/kg/day) Maximum Plausible
1,2 DCA	---	3.1×10^{-9}	4.0×10^{-8}	---	---
1,1 DCE	---	6.8×10^{-9}	1.4×10^{-7}	---	---
TCE	---	2.0×10^{-7}	4.8×10^{-6}	---	---
Vinyl Chloride	---	1.6×10^{-9}	2.0×10^{-9}	---	---
Benzene	---	3.0×10^{-9}	3.2×10^{-8}	---	---
Tetrachloroethylene	---	5.6×10^{-8}	6.4×10^{-7}	---	---
Methylene Chloride	9.0×10^{-1}	1.5×10^{-6}	3.2×10^{-6}	1.7×10^{-6}	3.6×10^{-6}
1,1 DCA	1.0	3.7×10^{-8}	6.0×10^{-8}	3.7×10^{-8}	6.0×10^{-8}
PCP	---	3.1×10^{-9}	1.2×10^{-8}		
Total				1.7×10^{-6}	3.6×10^{-6}

TABLE E-17
CALCULATION OF LIFETIME CANCER RISK
PARTICULATE INHALATION
(ADULT RESIDENT)

	CDI(1) (mg/kg/day)		Carcinogenic Potency Factor $(mg/kg/day)^{-1}$	Lifetime Cancer Risk	
Indicator Contaminant	**Best Estimate**	**Maximum Plausible**		**Best Estimate**	**Maximum Plausible**
1,2-DCA	$6.2 X 10^{-10}$	$1.6 X 10^{-9}$	$9.1 X 10^{-2}$	$5.6 X 10^{-11}$	$1.5 X 10^{-10}$
1,1-DCE	$1.4 X 10^{-9}$	$3.5 X 10^{-9}$	1.2	$1.6 X 10^{-9}$	$4.2 X 10^{-9}$
TCE	$4.0 X 10^{-8}$	$1.0 X 10^{-7}$	$1.3 X 10^{-2}$	$5.2 X 10^{-10}$	$1.4 X 10^{-9}$
Vinyl Chloride	$3.1 X 10^{-10}$	$8.0 X 10^{-10}$	$3.0 X 10^{-1}$	$9.3 X 10^{-11}$	$2.4 X 10^{-10}$
Benzene	$6.1 X 10^{-10}$	$1.6 X 10^{-9}$	$2.9 X 10^{-2}$	$1.8 X 10^{-11}$	$4.6 X 10^{-11}$
Tetrachloroethylene	$1.1 X 10^{-8}$	$2.9 X 10^{-8}$	$3.3 X 10^{-3}$	$3.7 X 10^{-11}$	$9.5 X 10^{-11}$
Methylene Chloride	$3.0 X 10^{-7}$	$7.7 X 10^{-7}$	$1.4 X 10^{-2}$	$4.2 X 10^{-9}$	$1.1 X 10^{-8}$
1,1 DCA	$7.4 X 10^{-9}$	$1.9 X 10^{-8}$	---	---	---
PCP	$6.2 X 10^{-10}$	$1.6 X 10^{-9}$	---	---	---
Total				$6.5 X 10^{-9}$	$1.7 X 10^{-8}$

(1) Chronic Daily Intake.

TABLE E-18
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) AND CHRONIC DAILY INTAKE (CDI)
OF NON-CARCINOGENS WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
AND ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
(ADULT RESIDENT)
TOTAL DAILY INTAKE BY INGESTION(1)

Indicator Contaminant	AIS (mg/kg/day)	SDI(mg/kg/day) (mg/kg/day) Best Estimate	Maximum Plausible	SDI:AIS (mg/kg/day) Best Estimate	Maximum Plausible	AIC (mg/kg/day)	CDI (mg/kg/day) Best Estimate	Maximum Plausible	CDI:AIC Best Estimate	Maximum Plausible
1,2 DCA	---	4.4×10^{-3}	4.6×10^{-1}	---	---	---	4.4×10^{-3}	4.9×10^{-3}	---	---
1,1 DCE	9.0×10^{-3}	1.4×10^{-3}	9.4×10^{-2}	1.6×10^{-1}	1.0×10^{1}	9.0×10^{-3}	1.4×10^{-3}	1.6×10^{-3}	1.6×10^{-1}	1.8×10^{-1}
TCE	---	2.5×10^{-2}	3.5	---	---	---	2.5×10^{-2}	2.8×10^{-2}	---	---
Vinyl Chloride	---	8.1×10^{-5}	2.8×10^{-3}	---	---	---	8.1×10^{-5}	9.0×10^{-5}	---	---
Benzene	---	4.9×10^{-4}	2.1×10^{-2}	---	---	---	4.9×10^{-4}	5.5×10^{-4}	---	---
Tetrachloroethylene	1.0×10^{-2}	1.5×10^{-3}	1.2×10^{-1}	1.5×10^{-1}	1.2×10^{-1}	1.00×10^{-2}	1.5×10^{-3}	1.7×10^{-3}	1.5×10^{-1}	1.7×10^{-1}
Methylene Chloride	6.0×10^{-2}	1.8×10^{-1}	25	3.0	4.2×10^{2}	6.00×10^{-2}	1.8×10^{-1}	2.0×10^{-1}	3.0	3.3
1,1 DCA	1.0	5.2×10^{-3}	3.8×10^{-1}	5.2×10^{-3}	3.8×10^{-1}	1.0×10^{-1}	5.2×10^{-3}	5.8×10^{-3}	5.2×10^{-2}	5.8×10^{-2}
PCP	3.0×10^{-2}	2.1×10^{-4}	9.0×10^{-3}	7.0×10^{-3}	3.0×10^{-1}	3.0×10^{-2}	2.1×10^{-4}	2.4×10^{-4}	7.0×10^{-3}	8.0×10^{-3}
Total				3.3	4.4×10^{2}				3.4	3.7

(1) Total Daily Intake by Ingestion equals ground water ingestion and contaminated soil ingestion.

TABLE E-19
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) AND CHRONIC DAILY INTAKE (CDI)
OF NON-CARCINOGENS WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
AND ACCEPTABLE CHRONIC DAILY INTAKE (AIC)
(ADULT RESIDENT)
TOTAL DAILY INTAKE BY INHALATION(1)

	AIS (mg/kg/day)	SDI (mg/kg/day)		SDI:AIS (mg/kg/day)		AIC (mg/kg/day)	CDI (mg/kg/day)		CDI:AIC	
Indicator Contaminant		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible
1,2 DCA	---	2.0×10^{-2}	4.9×10^{-2}	---	---	---	2.2×10^{-4}	5.3×10^{-4}	---	---
1,1 DCE	---	4.3×10^{-3}	1.0×10^{-2}	---	---	---	7.0×10^{-5}	1.7×10^{-4}	---	---
TCE	---	1.7×10^{-1}	3.7×10^{-1}	---	---	---	1.3×10^{-3}	3.0×10^{-3}	---	---
Vinyl Chloride	---	1.3×10^{-4}	3.0×10^{-4}	---	---	---	4.0×10^{-6}	1.0×10^{-5}	---	---
Benzene	---	9.5×10^{-3}	2.3×10^{-3}	---	---	---	2.0×10^{-5}	6.0×10^{-5}	---	---
Tetrachloroethylene	---	5.6×10^{-3}	1.3×10^{-2}	---	---	---	8.0×10^{-5}	1.8×10^{-4}	---	---
Methylene Chloride	9.0×10^{-1}	1.1	2.7	1.2	3.0	9.0×10^{-1}	8.8×10^{-3}	2.1×10^{-2}	9.8×10^{-3}	2.3×10^{-2}
1,1 DCA	1.0	1.7×10^{-2}	4.0×10^{-2}	1.2×10^{-2}	2.9×10^{-2}	1.0×10^{-1}	2.6×10^{-4}	6.2×10^{-4}	2.6×10^{-3}	6.2×10^{-3}
PCP	---	4.1×10^{-4}	9.6×10^{-4}	---	---	---	1.1×10^{-5}	2.5×10^{-5}	---	---
Total(4)				1.2	3.0				1.2×10^{-2}	2.9×10^{-2}

(1) Total Daily Inhalation equals inhalation of vapors while showering and inhalation of fugitive dust.
(4) Totals exceeding 1.00 are considered unacceptable.

TABLE E-20
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
(CHILDREN)

	TOTAL DAILY INTAKE BY INGESTION					TOTAL DAILY INTAKE BY INHALATION(2)				
	AIS (mg/kg/day)	SDI(mg/kg/day) (mg/kg/day)		SDI:AIS (mg/kg/day)		AIS (mg/kg/day)	SDI (mg/kg/day)		SDI:AIS	
Indicator Contaminant		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible
1,2 DCA	---	1.0×10^{-2}	9.4×10^{-1}	---	---	---	4.7×10^{-9}	2.0×10^{-7}	---	---
1,1 DCE	9.0×10^{-3}	3.2×10^{-3}	1.9×10^{-1}	3.6×10^{-1}	2.1×10^{1}	---	1.0×10^{-8}	7.2×10^{-7}	---	---
TCE	---	5.7×10^{-2}	7.1	---	---	---	3.1×10^{-7}	2.4×10^{-5}	---	---
Vinyl Chloride	---	1.8×10^{-4}	5.8×10^{-3}	---	---	---	2.4×10^{-9}	1.0×10^{-8}	---	---
Benzene	---	1.1×10^{-3}	4.3×10^{-2}	---	---	---	4.6×10^{-9}	1.6×10^{-7}	---	---
Tetrachloroethylene	1.0×10^{-2}	3.4×10^{-3}	2.5×10^{-1}	3.4×10^{-1}	25	---	8.5×10^{-8}	3.2×10^{-6}	---	---
Methylene Chloride	6.0×10^{-2}	4.0×10^{-1}	51	6.7	850	9.0×10^{-1}	2.3×10^{-6}	1.6×10^{-5}	2.6×10^{-6}	1.8×10^{-5}
1,1 DCA	1.0	1.2×10^{-2}	7.6×10^{-1}	1.2×10^{-2}	7.6×10^{-1}	1.0	5.6×10^{-8}	3.0×10^{-7}	5.6×10^{-8}	3.0×10^{-7}
PCP	3.0×10^{-2}	4.8×10^{-4}	1.8×10^{-2}	1.6×10^{-2}	6.0×10^{-1}	---	4.7×10^{-9}	6.0×10^{-8}	---	---
Total				7.4	897				2.7×10^{-6}	1.8×10^{-5}

TABLE E-21
COMPARISON OF SUBCHRONIC DAILY INTAKE (SDI) OF NON-CARCINOGENS
WITH ACCEPTABLE SUBCHRONIC DAILY INTAKE (AIS)
(CONSTRUCTION WORKER)

	TOTAL DAILY INTAKE BY INGESTION(1)					TOTAL DAILY INTAKE BY INHALATION(2)				
	AIS (mg/kg/day)	SDI(mg/kg/day) (mg/kg/day)		SDI:AIS (mg/kg/day)		AIS (mg/kg/day)	SDI (mg/kg/day)		SDI:AIS	
Indicator Contaminant		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible		Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible
1,2 DCA	---	2.0×10^{-7}	5.0×10^{-7}	---	---	---	3.1×10^{-9}	4.0×10^{-8}	---	---
1,1 DCE	9.0×10^{-3}	4.4×10^{-7}	1.8×10^{-5}	4.9×10^{-5}	2.0×10^{-3}	---	6.8×10^{-9}	1.4×10^{-7}	---	---
TCE	---	1.3×10^{-5}	6.1×10^{-4}	---	---	---	2.0×10^{-7}	4.8×10^{-6}	---	---
Vinyl Chloride	---	1.0×10^{-7}	2.6×10^{-7}	---	---	---	1.6×10^{-9}	2.0×10^{-9}	---	---
Benzene	---	2.0×10^{-7}	4.1×10^{-6}	---	---	---	3.0×10^{-9}	3.2×10^{-8}	---	---
Tetrachloroethylene	1.0×10^{-2}	3.6×10^{-6}	8.2×10^{-5}	3.6×10^{-4}	8.2×10^{-3}	---	5.6×10^{-8}	6.4×10^{-7}	---	---
Methylene Chloride	6.0×10^{-2}	9.6×10^{-5}	4.1×10^{-4}	1.6×10^{-3}	6.8×10^{-3}	9.0×10^{-1}	1.5×10^{-6}	3.2×10^{-6}	1.7×10^{-6}	3.6×10^{-6}
1,1 DCA	1.0	2.4×10^{-6}	7.7×10^{-6}	2.4×10^{-6}	7.7×10^{-6}	1.0	3.7×10^{-8}	6.0×10^{-8}	3.7×10^{-8}	6.0×10^{-8}
PCP	3.0×10^{-2}	2.0×10^{-7}	1.5×10^{-6}	4.0×10^{-8}	3.2×10^{-7}	---	3.1×10^{-9}	1.2×10^{-8}	---	---
Total				2.0×10^{-3}	1.7×10^{-2}				1.7×10^{-6}	3.6×10^{-6}

(1) Total Daily Intake by Ingestion equals contaminated soil ingestion.
(2) Total Daily Intake by Inhalation equals contaminated fugitive dust inhalation.

TABLE E-22
CALCULATION OF LIFETIME CANCER RISK
(ADULT RESIDENT)

	TOTAL DAILY INTAKE BY INGESTION(1)					TOTAL INHALATION(2)				
	CDI (mg/kg/day)		Carcinogenic Potency Factor	Lifetime Cancer Risk		CDI (mg/kg/day)		Carcingocenic Potency Factor	Lifetime Cancer Risk	
Indicator Contaminant	Best Estimate	Maximum Plausible	$(mg/kg/day)^{-1}$	Best Estimate	Maximum Plausible	Best Estimate	Maximum Plausible	$(mg/kg/day)^{-1}$	Best Estimate	Maximum Plausible
1,2 DCA	4.4×10^{-3}	4.9×10^{-3}	9.10×10^{-2}	4.0×10^{-4}	4.5×10^{-4}	2.2×10^{-5}	5.3×10^{-4}	9.1×10^{-2}	2.0×10^{-6}	4.8×10^{-5}
1,1 DCE	1.4×10^{-3}	1.6×10^{-3}	5.80×10^{-1}	8.4×10^{-4}	9.6×10^{-4}	7.0×10^{-5}	1.7×10^{-4}	1.2	8.4×10^{-5}	2.0×10^{-4}
TCE	2.5×10^{-2}	2.8×10^{-2}	1.10×10^{-2}	2.8×10^{-4}	3.1×10^{-4}	1.3×10^{-3}	3.0×10^{-3}	1.3×10^{-2}	1.7×10^{-5}	3.9×10^{-5}
Vinyl Chloride	8.1×10^{-5}	9.0×10^{-5}	2.30	1.9×10^{-4}	2.1×10^{-4}	4.0×10^{-6}	1.0×10^{-5}	3.0×10^{-1}	1.2×10^{-6}	3.0×10^{-6}
Benzene	4.9×10^{-4}	5.5×10^{-4}	5.20×10^{-2}	1.4×10^{-5}	1.6×10^{-5}	2.0×10^{-5}	6.0×10^{-5}	2.9×10^{-2}	5.8×10^{-7}	1.7×10^{-6}
Tetrachloroethylene	1.5×10^{-3}	1.7×10^{-3}	5.10×10^{-2}	7.7×10^{-5}	8.7×10^{-5}	8.0×10^{-5}	1.8×10^{-4}	3.3×10^{-3}	2.6×10^{-7}	5.9×10^{-7}
Methylene Chloride	1.8×10^{-1}	2.0×10^{-1}	7.50×10^{-3}	1.4×10^{-3}	1.5×10^{-3}	8.8×10^{-3}	2.1×10^{-2}	1.4×10^{-2}	1.2×10^{-4}	2.9×10^{-4}
1,1 DCA	5.2×10^{-3}	5.8×10^{-3}	9.1×10^{-2}	4.7×10^{-4}	5.3×10^{-4}	2.6×10^{-4}	6.2×10^{-4}	9.1×10^{-2}	2.4×10^{-4}	5.6×10^{-5}
PCP	2.1×10^{-4}	2.4×10^{-4}	1.6×10^{-2}	3.3×10^{-6}	3.8×10^{-6}	1.1×10^{-5}	2.5×10^{-5}	---	---	---
Total	---	---	---	3.7×10^{-3}	4.1×10^{-3}	---	---	---	2.5×10^{-4}	6.4×10^{-4}

(1) Total Daily Intake by ingestion equals ground water ingestion and contaminated soil ingestion.
(2) Total Daily Intake by inhalation equals water vapor inhalation and contaminated fugituve dust inhalation.